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A new algorithm for spacecraft charge detection based on a drop in electrostatic analyzer ion count spectra at energy levels higher than the level of vehicle potential has been derived. This so-called Count Drop algorithm was found to be effective in cases where, owing either to rapidly fluctuating potentials or significant secondary ion production, there were substantial ion counts in channels below the level of peak charging. In such cases, the Count Ratio (renamed Count Rise) and Distribution Function algorithms, both based on a sharp increase in counts at the level of charging, were able to detect maximum vehicle potential. A corresponding algorithm based on a sharp decrease in ion distribution function, called the Distribution-function Drop Algorithm has also been tested using SCATHA data. The ion count spectra associated with 11 instances of low earth orbit spacecraft charging in polar latitudes have been examined.

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22a. NAME OF RESPONSIBLE INDIVIDUAL: H R RADOSKI

22b. TELEPHONE (Include Area Code): (202) 767-4906

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DERIVATION AND TESTING OF COMPUTER ALGORITHMS FOR AUTOMATIC REAL-TIME DETERMINATION OF SPACE VEHICLE POTENTIALS IN VARIOUS PLASMA ENVIRONMENTS

May 31, 1988

Stanley L. Spiegel
Associate Professor
Mathematics Department
University of Lowell
Lowell, Massachusetts 01854

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1. INTRODUCTION

In the Annual Reports discussing research performed during the first two years of this grant (Spiegel, 1986 and 1987), we have described the derivation and testing of a new algorithm for spacecraft charge detection based on a drop in electrostatic analyzer (ESA) ion count spectra at energy levels higher (i.e. greater in magnitude) than the level of vehicle potential. This so-called Count Drop algorithm was found to be effective in cases where, owing either to rapidly fluctuating potentials or significant secondary ion production, there were substantial ion counts in ESA channels below the level of peak charging. In such cases, the Count Ratio (renamed Count Rise) and Distribution Function algorithms, both based on a sharp increase in counts at the level of charging, were unable to detect maximum vehicle potential. The Count Drop Algorithm was also found to be reasonably effective in tests using the 9925 ion count spectra data base employed in the successful derivation and testing of the count ratio and distribution function algorithms; in these spectra, cases of vehicle charging exhibited a sharp rise in ion counts at the charging level. (During the course of this grant period, work on the these earlier charge detection algorithms which has been described in two AFGL Technical Reports (Spiegel et al, 1985, and Spiegel and Cohen, 1985) has been somewhat revised and enlarged, and is to be published in the Journal of Spacecraft and Rockets (Spiegel et al, 1988, and Spiegel and Cohen, 1988).

In this final period of the research grant, we have extended our testing of the Count Drop Algorithm (CDA) using the SCATHA data base, and have derived a corresponding algorithm based on a sharp decrease in ion distribution function, called the Distribution-function Drop Algorithm (DDA) which has also been tested using SCATHA data. In addition, we have reexamined the Count Rise Algorithm (CRA) and the Distribution Function Algorithm, renamed Distribution-function Rise Algorithm (DRA), to investigate instances of algorithm failure and seek improved algorithm performance; as will be reported below such improvement has been achieved. In particular, a modification of the CRA named the Count-rise Product Algorithm (CPA) appears to be preferable to the previously top-rated DRA in the majority of cases, we have examined.

We have also examined in greater detail a previously derived (Spiegel, 1982) Goodness-of-Fit Algorithm (GFA) which had shown promise in limited testing as means of quickly detecting critically charged ion count spectra without determining the actual charge level. Unfortunately neither the GFA nor a closely related variant was able to perform satisfactorily over the range of plasma environments encompassed in the 30 day SCATHA data base.

Finally, we were able to examine some of the ion count spectra associated with 11 instances of low earth orbit (LEO) spacecraft charging in polar latitudes described by Gussenhoven et al (1985). Although time and computational resources did not permit testing of the various charge detection algorithms mentioned above on the extensive LEO ion count data base associated with the Defense Meteorological Satellite Program (DMSP) from which the 11 charging instances were taken, hand computations utilizing several hundred ion count spectra suggest that an algorithm based on a sharp peak in counts (such as the CRA, CPA or DRA) could successfully detect critical charging at LEO.

2. THE COUNT DROP ALGORITHM

The CDA has been described in the second Annual Report for this grant (Spiegel, 1987). In brief, the algorithm determines that the space vehicle is charged to the energy level of the I-th ESA channel if there is a decrease in ion counts in channel I+1 compared to the counts in channel I such that the ratio of these counts is less than some specified constant, smaller than unity, called the Drop Factor (DROPFAC). A further requirement, intended to prevent spurious reports of charging due to random count fluctuation at low count rates, is that the counts in the Ith channel be not less than a specified Count Minimum (ICMIN). In symbols, the requirements are:

$$C(I+1)/C(I) \leq \text{DROP FAC}$$

and

$$C(I) \geq \text{ICMIN}.$$

We have carried out extensive numerical expermentation to determine optimal values of the two parameters DROPFAC and ICMIN for algorithm success at determining the absence or

presence of critical charging employing the SCATHA data base. These tests have been carried out with respect to four critical charge (VCRIT) levels: -250V, -500V, -750V, and -1000V. The optimal parameter values are found to be DROPFAC=0.60 and ICMIN=90. The test results for the data base are summarized for the four critical charge levels in Tables 1a, 1b, 1c and 1d respectively, which list the fraction of the time that the CDA and the previously established vehicle potential estimates

(i) both agree the vehicle is critically charged,

(ii) both agree the vehicle is not critically charged,

(iii) differ, with the algorithm missing critical charging,

(iv) differ, with the algorithm falsely reporting critical charging ("false alarm"),

and which lists the overall success rate of the algorithm.

The result at the important -500V level is seen to be substantially better than that reported previously (Spiegel, 1987), with an overall success rate of 94.6% compared to the previous 91.0%. This is because of a modification in the present version of the CDA so that the search for drops-in-counts ceases the first time (i.e. at the lowest energy) that the charging criteria are met. In the earlier version, the search continued to higher energy levels, resulting often in false reports of critical charging. The newer version has a success rate of 95.0% when the vehicle is not charged, compared with 90.3% for the earlier version. When the vehicle is critically charged, the success rates are 91.5% (newer) and 93.5% (earlier). Hence there is a trade-off: the newer version has fewer false alarms but misses more charging events than the earlier version. (The improved overall score of the newer version results principally from the fact that instances of critical charging to the -500V level occur in only about one-quarter of the spectra of the data base.) If we assume that missed charging events are more harmful than false alarms, the original CDA is preferable to the new version despite the latter's better overall success rate.

3. THE DISTRIBUTION-FUNCTION DROP ALGORITHM

In order to improve algorithm performance based on the drop-in-counts in the ESA channel above the level of vehicle charge, we derived the DDA which computes the ion distribution function from the ion count spectra and then searches for a large decrease in distribution function above the charging level. The virtues of an algorithm based on analysis of the distribution function rather than the ESA ion counts have been discussed previously (Spiegel and Cohen 1985, 1988); in brief the two instrument-dependent parameters of the count-based method are replaced by a single criterion to assure statistical reliability in the searched-for change in distribution function.

In terms of the DDA, the requirement is that the decrease in distribution function from channel I to channel I+1 exceed the standard deviation of the difference in distribution functions (assuming a Poisson distribution in the underlying ion counts) by a specified multiple, called GAMMADR. In symbols, the condition is:

$$F(I) - F(I+1) \geq GAMMADR * SD(F(I) - F(I+1)).$$

We have performed extensive experimentation with the SCATHA data base to determine the optimal value for GAMMADR; the result for the best overall success rate is is GAMMADR = 5.5. A summary of these test results at the four critical charge levels is shown in Tables 2a, b, c and d. Also shown, in Tables 2e, f and g, are the results for other choices of GAMMADR (4.0, 5.0 and 6.0 respectively) at the -500V critical change level. From these results, it can be inferred that at -500V with GAMMADR=5.5, the DDA success rates are 89.8% when the vehicle is critically charged, 97.1% otherwise, and 95.4% overall. Alternatively, with GAMMADR=4.0, the success rates are 95.3% when charged, 92.6% when not, 93.3% overall.

Hence in comparison with the CDA (see Table 6 for success rate comparisons of all of the algorithms discussed in the report), it is clear that the DDA is capable of achieving a higher overall success rate, with fewer false alarms but also more missed charging events than the CDA at its best overall showing. One can always adjust algorithm parameters to reduce the number of missed charges, but at the expense of an increasing number of false alarms - obviously a 100% success rate when the vehicle is critically charged can be achieved by simply declaring every ESA count

spectrum to indicate charging. We have focused on obtaining the highest overall success rates, realizing that alternative criteria for determining optimal algorithm parameter values may be more reasonable for purposes of practical application.

4. THE DISTRIBUTION-FUNCTION RISE ALGORITHM

Although the DRA (formerly the Distribution Function Algorithm) had been derived and tested previously (Spiegel and Cohen, 1985 and 1988), and in fact has been selected for implementation in the Flight Model Discharge Systems (FMDS) program (Robson et al, 1986), we decided to perform additional numerical experimentation employing the SCATHA data base to determine whether we could achieve improved performance by modification of either algorithm logic or parameter values. It will be recalled that the DRA recognizes vehicle charging by identifying a statistically significant increase in ion distribution function at the level of vehicle potential. Symbolically, the condition is that if

$$F(I+1) - F(I) \geq GAMMAR\ I * SD\ (F(I+1) - F(I)),$$

the vehicle is considered charged to ESA channel I+1, with the additional condition that if

$$F(I+2) - F(I+1) \geq F(I+1) - F(I),$$

the charge level is taken to be at channel I+2. In our previous research we determined GAMMARI=4.0 gave highly successful results, but upon our present, more extensive analysis, we find the value GAMMARI=4.5 gives a slightly higher overall success rate. Test results for this parameter choice for the four critical charge levels are given in Tables 3a,b,c and d, with results at the -500V level for other values of GAMMARI (3.5, 4.0 and 5.0) given in Tables 3e, f and g respectively.

From these results, it can be inferred that at the -500V critical charge level, the DRA with GAMMARI=4.5 has success rates of 94.9% when the vehicle is critically charged, 99.3% otherwise, and 98.3% overall. The corresponding success rates for the choice GAMMARI=4.0 are 95.8%, 99.0% and 98.2% respectively. It is not clear whether the slight improvement in

overall success rate provided by the newer parameter value compensates for the accompanying reduction in successful performance when the vehicle is critically charged.

5. THE COUNT RISE ALGORITHM

Here, we returned to the previously derived Count Ratio Algorithm (Spiegel et al, 1985 and 1988) in order to see whether improved algorithm performance could be obtained. Our prior research had shown that charging could be inferred at ESA channel I+1 if the ion counts in that channel exceeded those at channel I by a specified multiple, referred to here as the Rise Factor RISEFAC, provided that the counts in channel I+1 satisfied a specified minimum count requirement ICMIN. In symbols, satisfaction of the conditions

$$C(I+1)/C(I) \geq \text{RISEFAC} > 1$$

and

$$C(I+1) \geq \text{ICMIN}$$

would indicate charging to the level of channel I+1, provided further that if

$$C(I+2)/C(I+1) \geq \text{PEAKFAC} > 1,$$

where PEAKFAC is another specified constant, the charge level is taken to be at channel I+2.

We had previously reported that good results were obtained with the parameter choices RISEFAC=4.0, ICMIN=90, PEAKFAC=1.5. At the -500V critical charge level, these choices had resulted in success rates of 88.6% when the vehicle was critically charged, 99.7% otherwise, and 97.2% overall. Upon further analysis performed during this grant period, we have obtained improved results with the values RISEFAC=3.0, ICMIN=50, with PEAKFAC unchanged at 1.5. The results for these values at the four critical charge levels are given in Tables 4a, b, c and d. At the -500 V charge level, the success rates are 94.9% when critically charged, 99.3% when not, and 98.3% overall. These results show clear improvement over the previously reported test results with earlier parameter choices. Moreover, these results are identical with those having the best overall score for the DRA, and are obtained with considerably less computational effort since no distribution functions nor related statistical properties need be calculated using the CRA — only

simple calculations using the ESA ion counts themselves. The greater simplicity, and hence speed, of the required CRA computations are clearly to its advantage as a charge detection method.

6. THE COUNT-RISE PRODUCT ALGORITHM

Motivated by the improved results for the CRA discussed in the previous section, we examined in careful detail various cases of algorithm failure to see whether some modification in the algorithm's logic would produce even better success rates. We found that in some of the cases, the informed estimates of vehicle potential against which the algorithm's determinations were compared were in fact quite close judgement calls so that in instances of disagreement, the algorithm determination was not necessarily in error. But another class of spectra for which the algorithm clearly failed occurred when the minimum count requirement was not satisfied even though a sharp peak, indicating vehicle charge, obviously existed.

One solution to this problem would be to reduce ICMIN below the value of 50 found to be optimal above, but this approach resulted in an unacceptable rise in false alarms owing to the statistical variability in the ion count data. Instead, the following modification to the CRA was found to result simultaneously in fewer missed critical charges and fewer false alarms: If the count minimum requirement is satisfied, the count ratio test for charging proceeds as described for the CRA. However if the count minimum requirement is not satisfied, a test for charging is still carried out but with a more stringent ratio condition — namely that the count ratio of channel I+1 to channel I exceed RISEFAC magnified by the ratio of ICMIN to the actual number of counts in channel I+1. In symbols, the conditions are

$$C(I+1)/C(I) \geq \mathrm{RISEFAC}, \quad C(I+1) \geq \mathrm{ICMIN}$$

or

$$C(I+1)/C(I) \geq \mathrm{RISEFAC} * (\mathrm{ICMIN}/C(I+1)), \quad C(I+1) < \mathrm{ICMIN}.$$

If either condition is satisfied, charging is assumed at level I+1 unless

$$C(I+2)/CI+1) \geq \mathrm{PEAKFAC}$$

in which case, as before, the charge level is taken to be at channel I+2. This method of charge detection, called the Count-rise Product Algorithm, avoids the difficulty of imposing a count minimum cut-off below which a determination of charging is impossible, and also protects against spurious reports of changing due to random count fluctuations by imposing more severe requirements for the determination of charging at lower count rates.

The CPA was tested using the SCATHA data base and the optimal parameter values were found to be RISEFAC=3, ICMIN=90, and PEAKFAC=1.5. The results with these choices, at the four critical charge levels, are given in Tables 5a, b, c and d. As can be readily seen, the CPA's performance is quite impressive. At the -500V critical level, the success rates are 95.8% when the vehicle is critically charged, 99.5% when not critically charged, and 98.6% overall, which is the highest overall rating at -500V we have achieved using any charge detection method (see Table 6 for a comparison of the success rates of the various algorithms tested). A detailed spectrum-by-spectrum comparison of optimal performances of the CPA and CDA at -500V for day 79114, a representative day from our data base, is shown in Table 7a; corresponding performances of the DRA and DDA are given in Table 7b. Given the excellent performance and computational simplicity (and hence speed) of the CPA, it appears to be the algorithm of choice for charge detection in plasma environments where a sharp increase in ion counts at the level of charging is anticipated. These include geosynchronous earth orbit (GEO) altitudes as exhibited in the SCATHA data, and also low earth orbit (LEO) altitudes as exhibited in the DMSP data to be discussed below.

A final comparison of algorithm performance of the five methods under discussion is given in Tables 8a, b, c, d, and 3 in which success rates at the important -500V level are shown for an enlarged (12,565 spectra) SCATHA data set. Comparison of these results with those given in Tables 1b, 2b, 3b, 4b, and 5b respectively show that the inclusion of 2640 additional spectra in our 30 day data base test has virtually no effect on algorithm success rates.

7. THE GOODNESS-OF-FIT ALGORITHM

In earlier work, when the then called Distribution Function Algorithm (now DRA) was the most successful at critical charge detection, we derived the GFA as a rapid screening technique to determine whether the ESA ion count spectra was sufficiently flat so that we could immediately conclude there was no critical charging of the vehicle. Alternatively, if there were large enough departure from constancy in the ion counts recorded in each ESA channel, the spectra could be checked by the then named Count Ratio Algorithm (now CRA) to verify whether critical charging had in fact occurred. The hope was that this combination of algorithms might be at least as successful as the distribution function method and be computationally simpler and speedier.

The GFA, described in Spiegel (1983), computed the chi-square statistic based on the differences of the observed ion count spectra from uniformity. Since a hypothetical flat count distribution is actually a poor model to represent uncharged count spectra, large values of chi-square were common even when the vehicle was uncharged. However, the computed chi-square values were found to increase by an order of magnitude or more, to levels of one thousand and higher, when actual charged spectra were encountered in our tests with SCATHA count data from day 79114. Hence the GFA showed promise as being a useful charge detection technique.

During the present research period, we have tested the GFA with data from five more days of our thirty day SCATHA data base. The results have shown that while a critical chi-square value could be assigned for each day's data to distinguish charged from uncharged spectra, no single critical value would serve this purpose for the count spectra associated with the differing ambient plasma conditions encountered on the six different days studied. Even when a modification was made to the GFA so that the ion count values were normalized for each spectra prior to the chi-square computations, it was impossible to select a universally acceptable critical value to use to determine whether the vehicle was or was not charged. Hence the concept of the GFA has not proven to be a successful technique for rapid detection of critical charging. Fortunately, the great success of the newly derived, computationally simple CPA, discussed above, has reduced the need for a screening method such as the GFA.

8. LOW EARTH ORBIT CHARGE DETECTION

We had hoped that during the period of this grant, we would be able to carry out extensive testing of our charge detection algorithms on ion count spectra obtained during periods of vehicle charging at LEO to determine whether successful performance could be obtained with the same or differing parameter choices from those found to be optimal at GEO, or else to see whether algorithm modification or entirely new methodology would be needed for satisfactory charge detection. Unfortunately, data from the BERT-1 rocket flight, which contained a real-time charge detection algorithm experiment on board, was lost owing to hardware malfunction and therefore, as discussed in our first Annual Report (Spiegel, 1986), we instead analyzed data from vacuum chamber tests of the BERT-1 experiment, leading to derivation of the Count Drop and Distribution-function Drop algorithms discussed above.

However, towards the very end of our grant period, we learned of ESA ion count data associated with the DMSP F6 and F7 satellites which had been analyzed and found to contain periods of vehicle charging to many hundreds of volts (Gussenhoven et al, 1985). Given the limited amount of time and computational resources then available, it was not possible to perform the numerical computation and experimentation necessary to test algorithm performance with this LEO data. Instead we carried out hand computations on several hundred ion count spectra selected from the eleven instances of charging discussed by Gussenhoven et al (1985). The results of this analysis indicate that an algorithm such as the CPA, CRA or DRA would be able to detect cases of critical vehicle charge. The observed increased in counts at the level of charging invariably exceeded the number of counts in the next lower energy channel by a factor of four or more (frequently by factors in excess of ten), with the number of counts at the charge level varying from 30 or 40 up to several thousands. No computations of the ion distribution function were performed, but the needed ESA calibrations have been published (Hardy et al, 1985) so that such calculations could be easily carried out. In the absence of more extensive numerical work, it is risky to predict algorithm success. However the clear jump in ion counts exhibited in the charged

spectra we have examined strongly suggests that the charge detection algorithms based on this phenomenon which we have studied and discussed above will work well with this data.

9. CONCLUSION

We have been able to improve the performance of charge detection algorithm previously derived, the Count Rise and Distribution-function Rise Algorithms, by modifications in logic and/or optimal parameter values, compared to our previously reported test results using SCATHA ion count data. With these latest results, the more complex DRA no longer is distinctly more successful than the simpler and faster CRA. Furthermore, we have derived a variant of the CRA, the Count-rise Product Algorithm, which is the most successful method of all with our data base, and also retains the virtue of computational simplicity. It appears to be the algorithm of choice for the plasma environments at GEO characterized by count spectra with a distinct rise in counts as the ESA channel at the level of vehicle charge is approached from below.

Tests with a different type of detection method, the Goodness-of Fit Algorithm, failed to lead to detection criteria that would give satisfactory results over the range of spectra found in our SCATHA data base.

We also derived the Count Drop and Distribution-function Drop Algorithms for charge detection with count spectra, such as found in vacuum chamber tests of the BERT-1 experiment, where there was a distinct drop-in-counts beyond the level of peak charge, but no sharp rise compared to the counts in lower energy channels (which precluded use of the CRA, DRA or CPA). When tested with the SCATHA spectra, which exhibited a sharp peak in counts at the charging level, the CDA and DDA worked well but not as successfully as the algorithms based on the rise in counts. This result was not surprising since the count increases at the level of charge were invariably more distinct, and hence easier to detect, than the decreases in counts beyond the charge level.

At low earth orbit, the charged spectra we have examined reveal sharp count rises at the level of vehicle charge, and we are encouraged to believe that the CRA, DRA and/or CPA will

prove to be quite effective with spectra from this plasma environment. We would like to be able to assert this claim more definitively; this will require numerical experimentation utilizing many thousands of ion count spectra taken from DMSP satellite data, and from any other LEO ion count data which may be available. We hope to obtain the necessary support to pursue this investigation in the near future.

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APPENDIX

Tables 1a to 8e

Table 1a. Test results of the Count Drop Algorithm, with DROPFAC=0.60 and ICMIN=90, for VCRIT=-250V.

RESULTS FOR COUNT DROP ALGORITHM

DAY	NSPEC	CHARGED	UNCHRGD	MISS-CH	F-ALARM	CORRECT	WRONG
86	568	.011	.947	.039	.004	.958	.042
87	284	.162	.644	.141	.053	.806	.194
98	246	.715	.285	0.000	0.000	1.000	0.000
100	230	.187	.696	.057	.061	.883	.117
104	268	.638	.351	.011	0.000	.989	.011
105	220	.655	.309	.032	.005	.964	.036
106	254	.665	.327	.008	0.000	.992	.008
108	267	.506	.412	.082	0.000	.918	.082
114	266	.451	.523	.019	.008	.974	.026
117	250	.156	.656	.172	.016	.812	.188
118	179	0.000	.989	.006	.006	.989	.011
120	280	0.000	.975	.018	.007	.975	.025
172	430	.005	.870	0.000	.126	.874	.126
241	101	.475	.376	.089	.059	.851	.149
267	333	.027	.796	.009	.168	.823	.177
270	355	.439	.490	.003	.068	.930	.070
271	582	.204	.713	.033	.050	.918	.082
272	342	.477	.360	.006	.158	.836	.164
273	330	.188	.652	.112	.048	.839	.161
274	332	.199	.768	.024	.009	.967	.033
276	342	.307	.585	.003	.105	.892	.108
277	344	.436	.544	.009	.012	.980	.020
282	552	.362	.603	.009	.025	.966	.034
283	338	.382	.571	.047	0.000	.953	.047
285	506	.356	.625	.012	.008	.980	.020
286	338	.186	.790	.006	.018	.976	.024
294	613	0.000	.987	0.000	.013	.987	.013
302	344	.227	.767	0.000	.006	.994	.006
305	346	.145	.815	.032	.009	.960	.040
164	85	0.000	1.000	0.000	0.000	1.000	0.000
TOTAL	9925	.265	.670	.029	.036	.935	.065

Table 1b. Test results of the Count Drop Algorithm, with DROPFAC=0.60 and ICMIN=90, for VCRIT=-500V.

RESULTS FOR COUNT DROP ALGORITHM

DAY	NSPEC	CHARGED	UNCHRGD	MISS-CH	F-ALARM	CORRECT	WRONG
86	568	.002	.972	.023	.004	.974	.026
87	284	.162	.644	.141	.053	.806	.194
98	246	.654	.346	0.000	0.000	1.000	0.000
100	230	.148	.739	.048	.065	.887	.113
104	268	.634	.362	.004	0.000	.996	.004
105	220	.359	.623	.018	0.000	.982	.018
106	254	.650	.343	.004	.004	.992	.008
108	267	.502	.419	.079	0.000	.921	.079
114	266	.436	.545	.004	.015	.981	.019
117	250	.008	.960	.012	.020	.968	.032
118	179	0.000	.994	0.000	.006	.994	.006
120	280	0.000	.975	.018	.007	.975	.025
172	430	0.000	.879	0.000	.121	.879	.121
241	101	.079	.842	.050	.030	.921	.079
267	333	.003	.877	0.000	.120	.880	.120
270	355	.437	.507	.003	.054	.944	.056
271	582	.196	.730	.029	.045	.926	.074
272	342	.342	.471	.006	.181	.813	.187
273	330	.185	.652	.112	.052	.836	.164
274	332	.181	.810	0.000	.009	.991	.009
276	342	.287	.617	.003	.094	.904	.096
277	344	.262	.712	.009	.017	.974	.026
282	552	.359	.612	.009	.020	.971	.029
283	338	.157	.805	.038	0.000	.962	.038
285	506	.318	.662	.012	.008	.980	.020
286	338	0.000	.997	0.000	.003	.997	.003
294	613	0.000	.989	0.000	.011	.989	.011
302	344	.203	.788	.003	.006	.991	.009
305	346	.136	.827	.029	.009	.962	.038
164	85	0.000	1.000	0.000	0.000	1.000	0.000
TOTAL	9925	.216	.730	.020	.034	.946	.054

Table 1c. Test results of the Count Drop Algorithm, with DROPFAC=0.60 and ICMIN=90, for VCRIT=-750V.

RESULTS FOR COUNT DROP ALGORITHM

DAY	NSPEC	CHARGED	UNCHRGD	MISS-CH	F-ALARM	CORRECT	WRONG
86	568	0.000	.991	.005	.004	.991	.009
87	284	.162	.648	.137	.053	.810	.190
98	246	.390	.606	0.000	.004	.996	.004
100	230	.096	.800	.039	.065	.896	.104
104	268	.608	.381	.004	.007	.989	.011
105	220	.277	.709	.009	.005	.986	.014
106	254	.630	.358	.008	.004	.988	.012
108	267	.502	.427	.071	0.000	.929	.071
114	266	.432	.556	.004	.008	.989	.011
117	250	0.000	.984	0.000	.016	.984	.016
118	179	0.000	.994	0.000	.006	.994	.006
120	280	0.000	.975	.018	.007	.975	.025
172	430	0.000	.879	0.000	.121	.879	.121
241	101	.020	.921	.030	.030	.941	.059
267	333	.003	.898	0.000	.099	.901	.099
270	355	.400	.555	.006	.039	.955	.045
271	582	.196	.734	.029	.041	.930	.070
272	342	.251	.599	.006	.143	.851	.149
273	330	.176	.664	.109	.052	.839	.161
274	332	.163	.834	0.000	.003	.997	.003
276	342	.249	.661	.003	.088	.909	.091
277	344	.192	.782	.009	.017	.974	.026
282	552	.355	.618	.009	.018	.973	.027
283	338	.121	.870	.003	.006	.991	.009
285	506	.255	.711	.012	.022	.966	.034
286	338	0.000	1.000	0.000	0.000	1.000	0.000
294	613	0.000	.992	0.000	.008	.992	.008
302	344	.186	.808	0.000	.006	.994	.006
305	346	.118	.844	.029	.009	.962	.038
164	85	0.000	1.000	0.000	0.000	1.000	0.000
TOTAL	9925	.189	.763	.017	.031	.952	.048

Table 1d. Test results of the Count Drop Algorithm, with DROPFAC=0.60 and ICMIN=90, for VCRIT=-1000V.

RESULTS FOR COUNT DROP ALGORITHM

DAY	NSPEC	CHARGED	UNCHRGD	MISS-CH	F-ALARM	CORRECT	WRONG
86	568	0.000	.993	.004	.004	.993	.007
87	284	.162	.676	.109	.053	.838	.162
98	246	.276	.724	0.000	0.000	1.000	0.000
100	230	.035	.891	.013	.061	.926	.074
104	268	.328	.660	0.000	.011	.989	.011
105	220	.250	.741	.005	.005	.991	.009
106	254	.606	.378	.004	.012	.984	.016
108	267	.498	.434	.067	0.000	.933	.067
114	266	.429	.556	.004	.011	.985	.015
117	250	0.000	.984	0.000	.016	.984	.016
118	179	0.000	.994	0.000	.006	.994	.006
120	280	0.000	.986	.007	.007	.986	.014
172	430	0.000	.879	0.000	.121	.879	.121
241	101	0.000	.970	.010	.020	.970	.030
267	333	0.000	.937	0.000	.063	.937	.063
270	355	.200	.749	0.000	.051	.949	.051
271	582	.194	.737	.027	.041	.931	.069
272	342	.231	.623	.006	.140	.854	.146
273	330	.161	.709	.076	.055	.870	.130
274	332	.139	.858	0.000	.003	.997	.003
276	342	.190	.722	.003	.085	.912	.088
277	344	.151	.834	.009	.006	.985	.015
282	552	.355	.618	.009	.018	.973	.027
283	338	.003	.991	0.000	.006	.994	.006
285	506	.164	.812	.012	.012	.976	.024
286	338	0.000	1.000	0.000	0.000	1.000	0.000
294	613	0.000	.995	0.000	.005	.995	.005
302	344	.174	.826	0.000	0.000	1.000	0.000
305	346	.092	.867	.029	.012	.960	.040
164	85	0.000	1.000	0.000	0.000	1.000	0.000
TOTAL	9925	.153	.805	.013	.029	.958	.042

Table 2a. Test results of the Distribution-Function Drop Algorithm with GAMMADR=5.5, for VCRIT=-250V.

RESULTS FOR DISTRIBUTION FUNCTION DROP ALGORITHM

DAY	NSPEC	CHARGED	UNCHRGD	MISS-CH	F-ALARM	CORRECT	WRONG
86	568	.011	.951	.039	0.000	.961	.039
87	284	.123	.655	.180	.042	.778	.222
98	246	.699	.285	.016	0.000	.984	.016
100	230	.178	.735	.065	.022	.913	.087
104	268	.631	.351	.019	0.000	.981	.019
105	220	.641	.314	.045	0.000	.955	.045
106	254	.669	.327	.004	0.000	.996	.004
108	267	.483	.412	.105	0.000	.895	.105
114	266	.444	.515	.026	.015	.959	.041
117	250	.180	.668	.148	.004	.848	.152
118	179	0.000	.994	.006	0.000	.994	.006
120	280	0.000	.979	.018	.004	.979	.021
172	430	.005	.886	0.000	.109	.891	.109
241	101	.396	.396	.168	.040	.792	.208
267	333	.024	.877	.012	.087	.901	.099
270	355	.439	.507	.003	.051	.946	.054
271	582	.199	.735	.038	.027	.935	.065
272	342	.480	.392	.003	.126	.871	.129
273	330	.152	.670	.148	.030	.821	.179
274	332	.199	.768	.024	.009	.967	.033
276	342	.310	.620	0.000	.070	.930	.070
277	344	.422	.544	.023	.012	.965	.035
282	552	.368	.623	.004	.005	.991	.009
283	338	.399	.571	.030	0.000	.970	.030
285	506	.350	.626	.018	.006	.976	.024
286	338	.180	.799	.012	.009	.979	.021
294	613	0.000	.992	0.000	.008	.992	.008
302	344	.227	.770	0.000	.003	.997	.003
305	346	.147	.821	.029	.003	.968	.032
164	85	0.000	1.000	0.000	0.000	1.000	0.000
TOTAL	9925	.260	.682	.033	.024	.943	.057

Table 2b. Test results of the Distribution-Function Drop Algorithm with GAMMADR=5.5, for VCRIT=-500V.

RESULTS FOR DISTRIBUTION FUNCTION DROP ALGORITHM

DAY	NSPEC	CHARGED	UNCHRGD	MISS-CH	F-ALARM	CORRECT	WRONG
86	568	.002	.975	.023	0.000	.977	.023
87	284	.123	.655	.180	.042	.778	.222
98	246	.638	.346	.016	0.000	.984	.016
100	230	.139	.778	.057	.026	.917	.083
104	268	.623	.362	.015	0.000	.985	.015
105	220	.359	.623	.018	0.000	.982	.018
106	254	.650	.346	.004	0.000	.996	.004
108	267	.479	.419	.101	0.000	.899	.101
114	266	.432	.545	.008	.015	.977	.023
117	250	.016	.976	.004	.004	.992	.008
118	179	0.000	1.000	0.000	0.000	1.000	0.000
120	280	0.000	.979	.018	.004	.979	.021
172	430	0.000	.893	0.000	.107	.893	.107
241	101	.069	.842	.059	.030	.911	.089
267	333	0.000	.943	.003	.054	.943	.057
270	355	.437	.521	.003	.039	.958	.042
271	582	.189	.749	.036	.026	.938	.062
272	342	.345	.515	.003	.137	.860	.140
273	330	.148	.673	.148	.030	.821	.179
274	332	.181	.813	0.000	.006	.994	.006
276	342	.289	.649	0.000	.061	.939	.061
277	344	.247	.724	.023	.006	.971	.029
282	552	.364	.630	.004	.002	.995	.005
283	338	.172	.805	.024	0.000	.976	.024
285	506	.312	.664	.018	.006	.976	.024
286	338	0.000	.997	0.000	.003	.997	.003
294	613	0.000	.992	0.000	.008	.992	.008
302	344	.203	.788	.003	.006	.991	.009
305	346	.139	.832	.026	.003	.971	.029
164	85	0.000	1.000	0.000	0.000	1.000	0.000
TOTAL	9925	.212	.742	.024	.022	.954	.046

Table 2c. Test results of the Distribution-Function Drop Algorithm with GAMMADR=5.5, for VCRIT=-750V.

RESULTS FOR DISTRIBUTION FUNCTION DROP ALGORITHM

DAY	NSPEC	CHARGED	UNCHRGD	MISS-CH	F-ALARM	CORRECT	WRONG
86	568	0.000	.995	.005	0.000	.995	.005
87	284	.123	.658	.176	.042	.782	.218
98	246	.374	.606	.016	.004	.980	.020
100	230	.083	.835	.052	.030	.917	.083
104	268	.597	.384	.015	.004	.981	.019
105	220	.277	.709	.009	.005	.986	.014
106	254	.630	.362	.008	0.000	.992	.008
108	267	.479	.427	.094	0.000	.906	.094
114	266	.429	.549	.008	.015	.977	.023
117	250	0.000	.996	0.000	.004	.996	.004
118	179	0.000	1.000	0.000	0.000	1.000	0.000
120	280	0.000	.979	.018	.004	.979	.021
172	430	0.000	.895	0.000	.105	.895	.105
241	101	.020	.921	.030	.030	.941	.059
267	333	0.000	.949	.003	.048	.949	.051
270	355	.400	.572	.006	.023	.972	.028
271	582	.189	.751	.036	.024	.940	.060
272	342	.254	.632	.003	.111	.886	.114
273	330	.142	.685	.142	.030	.827	.173
274	332	.163	.834	0.000	.003	.997	.003
276	342	.251	.693	0.000	.056	.944	.056
277	344	.177	.785	.023	.015	.962	.038
282	552	.361	.636	.004	0.000	.996	.004
283	338	.124	.861	0.000	.015	.985	.015
285	506	.251	.719	.016	.014	.970	.030
286	338	0.000	1.000	0.000	0.000	1.000	0.000
294	613	0.000	.992	0.000	.008	.992	.008
302	344	.186	.811	0.000	.003	.997	.003
305	346	.121	.850	.026	.003	.971	.029
164	85	0.000	1.000	0.000	0.000	1.000	0.000
TOTAL	9925	.185	.773	.021	.021	.958	.042

Table 2d. Test results of the Distribution-Function Drop Algorithm with GAMMADR=5.5, for VCRIT=-1000V.

RESULTS FOR DISTRIBUTION FUNCTION DROP ALGORITHM

DAY	NSPEC	CHARGED	UNCHRGD	MISS-CH	F-ALARM	CORRECT	WRONG
86	568	0.000	.996	.004	0.000	.996	.004
87	284	.123	.687	.148	.042	.810	.190
98	246	.260	.724	.016	0.000	.984	.016
100	230	.026	.926	.022	.026	.952	.048
104	268	.321	.664	.007	.007	.985	.015
105	220	.250	.741	.005	.005	.991	.009
106	254	.606	.390	.004	0.000	.996	.004
108	267	.476	.434	.090	0.000	.910	.090
114	266	.429	.553	.004	.015	.981	.019
117	250	0.000	.996	0.000	.004	.996	.004
118	179	0.000	1.000	0.000	0.000	1.000	0.000
120	280	0.000	.989	.007	.004	.989	.011
172	430	0.000	.895	0.000	.105	.895	.105
241	101	0.000	.970	.010	.020	.970	.030
267	333	0.000	.970	0.000	.030	.970	.030
270	355	.200	.772	0.000	.028	.972	.028
271	582	.189	.756	.033	.022	.945	.055
272	342	.234	.655	.003	.108	.889	.111
273	330	.130	.730	.106	.033	.861	.139
274	332	.139	.861	0.000	0.000	1.000	0.000
276	342	.190	.749	.003	.058	.939	.061
277	344	.137	.837	.023	.003	.974	.026
282	552	.361	.636	.004	0.000	.996	.004
283	338	.003	.991	0.000	.006	.994	.006
285	506	.160	.816	.016	.008	.976	.024
286	338	0.000	1.000	0.000	0.000	1.000	0.000
294	613	0.000	.992	0.000	.008	.992	.008
302	344	.174	.826	0.000	0.000	1.000	0.000
305	346	.095	.873	.026	.006	.968	.032
164	85	0.000	1.000	0.000	0.000	1.000	0.000
TOTAL	9925	.149	.815	.017	.019	.964	.036

Table 2e. **Test results of the Distribution-Function Drop Algorithm with GAMMADR=4.0, for VCRIT=-500V.**

RESULTS FOR DISTRIBUTION FUNCTION DROP ALGORITHM

DAY	NSPEC	CHARGED	UNCHRGD	MISS-CH	F-ALARM	CORRECT	WRONG
86	568	.002	.944	.023	.032	.945	.055
87	284	.229	.595	.074	.102	.824	.176
98	246	.654	.346	0.000	0.000	1.000	0.000
100	230	.174	.709	.022	.096	.883	.117
104	268	.634	.362	.004	0.000	.996	.004
105	220	.368	.618	.009	.005	.986	.014
106	254	.654	.346	0.000	0.000	1.000	0.000
108	267	.554	.408	.026	.011	.963	.037
114	266	.436	.504	.004	.056	.940	.060
117	250	.020	.948	0.000	.032	.968	.032
118	179	0.000	.983	0.000	.017	.983	.017
120	280	0.000	.979	.018	.004	.979	.021
172	430	0.000	.914	0.000	.086	.914	.086
241	101	.059	.822	.069	.050	.881	.119
267	333	.003	.859	0.000	.138	.862	.138
270	355	.428	.487	.011	.073	.915	.085
271	582	.208	.716	.017	.058	.924	.076
272	342	.348	.406	0.000	.246	.754	.246
273	330	.233	.633	.064	.070	.867	.133
274	332	.181	.807	0.000	.012	.988	.012
276	342	.281	.558	.009	.152	.839	.161
277	344	.265	.724	.006	.006	.988	.012
282	552	.368	.609	0.000	.024	.976	.024
283	338	.175	.802	.021	.003	.976	.024
285	506	.328	.652	.002	.018	.980	.020
286	338	0.000	1.000	0.000	0.000	1.000	0.000
294	613	0.000	.873	0.000	.127	.873	.127
302	344	.203	.750	.003	.044	.953	.047
305	346	.162	.763	.003	.072	.925	.075
164	85	0.000	1.000	0.000	0.000	1.000	0.000
TOTAL	9925	.225	.708	.011	.056	.933	.067

Table 2f. Test results of the Distribution-Function Drop Algorithm with GAMMADR=5.0, for VCRIT=-500V.

RESULTS FOR DISTRIBUTION FUNCTION DROP ALGORITHM

DAY	NSPEC	CHARGED	UNCHRGD	MISS-CH	F-ALARM	CORRECT	WRONG
86	568	.002	.970	.023	.005	.972	.028
87	284	.162	.651	.141	.046	.813	.187
98	246	.654	.346	0.000	0.000	1.000	0.000
100	230	.148	.774	.048	.030	.922	.078
104	268	.631	.362	.007	0.000	.993	.007
105	220	.368	.623	.009	0.000	.991	.009
106	254	.654	.346	0.000	0.000	1.000	0.000
108	267	.494	.419	.086	0.000	.914	.086
114	266	.436	.534	.004	.026	.970	.030
117	250	.016	.964	.004	.016	.980	.020
118	179	0.000	.989	0.000	.011	.989	.011
120	280	0.000	.979	.018	.004	.979	.021
172	430	0.000	.900	0.000	.100	.900	.100
241	101	.069	.832	.059	.040	.901	.099
267	333	0.000	.925	.003	.072	.925	.075
270	355	.437	.510	.003	.051	.946	.054
271	582	.194	.741	.031	.034	.935	.065
272	342	.348	.488	0.000	.164	.836	.164
273	330	.176	.658	.121	.045	.833	.167
274	332	.181	.813	0.000	.006	.994	.006
276	342	.289	.614	0.000	.096	.904	.096
277	344	.259	.724	.012	.006	.983	.017
282	552	.364	.629	.004	.004	.993	.007
283	338	.175	.805	.021	0.000	.979	.021
285	506	.320	.664	.010	.006	.984	.016
286	338	0.000	.997	0.000	.003	.997	.003
294	613	0.000	.976	0.000	.024	.976	.024
302	344	.203	.785	.003	.009	.988	.012
305	346	.145	.829	.020	.006	.974	.026
164	85	0.000	1.000	0.000	0.000	1.000	0.000
TOTAL	9925	.217	.736	.019	.028	.953	.047

Table 2g. Test results of the Distribution-Function Drop Algorithm with GAMMADR=6.0, for VCRIT=-500V.

RESULTS FOR DISTRIBUTION FUNCTION DROP ALGORITHM

DAY	NSPEC	CHARGED	UNCHRGD	MISS-CH	F-ALARM	CORRECT	WRONG
86	568	.002	.975	.023	0.000	.977	.023
87	284	.092	.665	.211	.032	.757	.243
98	246	.638	.346	.016	0.000	.984	.016
100	230	.122	.778	.074	.026	.900	.100
104	268	.619	.362	.019	0.000	.981	.019
105	220	.341	.623	.036	0.000	.964	.036
106	254	.650	.346	.004	0.000	.996	.004
108	267	.468	.419	.112	0.000	.888	.112
114	266	.432	.549	.008	.011	.981	.019
117	250	.016	.980	.004	0.000	.996	.004
118	179	0.000	1.000	0.000	0.000	1.000	0.000
120	280	0.000	.979	.018	.004	.979	.021
172	430	0.000	.874	0.000	.126	.874	.126
241	101	.079	.851	.050	.020	.931	.069
267	333	0.000	.955	.003	.042	.955	.045
270	355	.437	.530	.003	.031	.966	.034
271	582	.184	.751	.041	.024	.935	.065
272	342	.342	.547	.006	.105	.889	.111
273	330	.130	.676	.167	.027	.806	.194
274	332	.181	.813	0.000	.006	.994	.006
276	342	.289	.652	0.000	.058	.942	.058
277	344	.244	.724	.026	.006	.968	.032
282	552	.361	.630	.007	.002	.991	.009
283	338	.160	.805	.036	0.000	.964	.036
285	506	.302	.666	.028	.004	.968	.032
286	338	0.000	.997	0.000	.003	.997	.003
294	613	0.000	.995	0.000	.005	.995	.005
302	344	.203	.788	.003	.006	.991	.009
305	346	.121	.832	.043	.003	.954	.046
164	85	0.000	1.000	0.000	0.000	1.000	0.000
TOTAL	9925	.207	.745	.029	.019	.951	.049

Table 3a. Test results of the Distribution-Function Rise Algorithm with GAMMARI=4.5, for VCRIT=-250V.

RESULTS FOR DISTRIBUTION FUNCTION RISE ALGORITHM

DAY	NSPEC	CHARGED	UNCHRGD	MISS-CH	F-ALARM	CORRECT	WRONG
86	568	.016	.951	.033	0.000	.967	.033
87	284	.254	.690	.049	.007	.944	.056
98	246	.715	.285	0.000	0.000	1.000	0.000
100	230	.226	.752	.017	.004	.978	.022
104	268	.646	.351	.004	0.000	.996	.004
105	220	.664	.309	.023	.005	.973	.027
106	254	.673	.327	0.000	0.000	1.000	0.000
108	267	.562	.412	.026	0.000	.974	.026
114	266	.436	.530	.034	0.000	.966	.034
117	250	.232	.672	.096	0.000	.904	.096
118	179	0.000	.994	.006	0.000	.994	.006
120	280	0.000	.979	.018	.004	.979	.021
172	430	.002	.993	.002	.002	.995	.005
241	101	.416	.406	.149	.030	.822	.178
267	333	0.000	.955	.036	.009	.955	.045
270	355	.439	.530	.003	.028	.969	.031
271	582	.208	.741	.029	.022	.948	.052
272	342	.482	.482	0.000	.035	.965	.035
273	330	.233	.685	.067	.015	.918	.082
274	332	.196	.771	.027	.006	.967	.033
276	342	.298	.675	.012	.015	.974	.026
277	344	.427	.552	.017	.003	.980	.020
282	552	.370	.629	.002	0.000	.998	.002
283	338	.414	.571	.015	0.000	.985	.015
285	506	.368	.632	0.000	0.000	1.000	0.000
286	338	.104	.808	.089	0.000	.911	.089
294	613	0.000	1.000	0.000	0.000	1.000	0.000
302	344	.224	.770	.003	.003	.994	.006
305	346	.171	.824	.006	0.000	.994	.006
164	85	0.000	1.000	0.000	0.000	1.000	0.000
TOTAL	9925	.272	.700	.022	.006	.972	.028

Table 3b. Test results of the Distribution-Function Rise Algorithm with GAMMARI=4.5, for VCRIT=-500V.

RESULTS FOR DISTRIBUTION FUNCTION RISE ALGORITHM

DAY	NSPEC	CHARGED	UNCHRGD	MISS-CH	F-ALARM	CORRECT	WRONG
86	568	.005	.975	.019	0.000	.981	.019
87	284	.254	.690	.049	.007	.944	.056
98	246	.642	.346	.012	0.000	.988	.012
100	230	.178	.800	.017	.004	.978	.022
104	268	.634	.362	.004	0.000	.996	.004
105	220	.377	.623	0.000	0.000	1.000	0.000
106	254	.650	.346	.004	0.000	.996	.004
108	267	.558	.419	.022	0.000	.978	.022
114	266	.432	.560	.008	0.000	.992	.008
117	250	.008	.980	.012	0.000	.988	.012
118	179	0.000	1.000	0.000	0.000	1.000	0.000
120	280	0.000	.979	.018	.004	.979	.021
172	430	0.000	.998	0.000	.002	.998	.002
241	101	.099	.842	.030	.030	.941	.059
267	333	0.000	.997	.003	0.000	.997	.003
270	355	.437	.538	.003	.023	.975	.025
271	582	.203	.754	.022	.021	.957	.043
272	342	.313	.623	.035	.029	.936	.064
273	330	.233	.688	.064	.015	.921	.079
274	332	.178	.819	.003	0.000	.997	.003
276	342	.287	.696	.003	.015	.982	.018
277	344	.265	.727	.006	.003	.991	.009
282	552	.368	.632	0.000	0.000	1.000	0.000
283	338	.180	.805	.015	0.000	.985	.015
285	506	.324	.670	.006	0.000	.994	.006
286	338	0.000	1.000	0.000	0.000	1.000	0.000
294	613	0.000	1.000	0.000	0.000	1.000	0.000
302	344	.201	.788	.006	.006	.988	.012
305	346	.165	.835	0.000	0.000	1.000	0.000
164	85	0.000	1.000	0.000	0.000	1.000	0.000
TOTAL	9925	.224	.759	.012	.005	.983	.017

Table 3c. Test results of the Distribution-Function Rise Algorithm with GAMMARI=4.5, for VCRIT=-750V.

RESULTS FOR DISTRIBUTION FUNCTION RISE ALGORITHM

DAY	NSPEC	CHARGED	UNCHRGD	MISS-CH	F-ALARM	CORRECT	WRONG
86	568	0.000	.995	.005	0.000	.995	.005
87	284	.246	.697	.053	.004	.944	.056
98	246	.370	.610	.020	0.000	.980	.020
100	230	.122	.861	.013	.004	.983	.017
104	268	.567	.388	.045	0.000	.955	.045
105	220	.286	.714	0.000	0.000	1.000	0.000
106	254	.634	.362	.004	0.000	.996	.004
108	267	.554	.427	.019	0.000	.981	.019
114	266	.432	.564	.004	0.000	.996	.004
117	250	0.000	1.000	0.000	0.000	1.000	0.000
118	179	0.000	1.000	0.000	0.000	1.000	0.000
120	280	0.000	.979	.018	.004	.979	.021
172	430	0.000	.998	0.000	.002	.998	.002
241	101	.030	.931	.020	.020	.960	.040
267	333	0.000	.997	.003	0.000	.997	.003
270	355	.377	.575	.028	.020	.952	.048
271	582	.201	.754	.024	.021	.955	.045
272	342	.257	.713	0.000	.029	.971	.029
273	330	.224	.703	.061	.012	.927	.073
274	332	.160	.837	.003	0.000	.997	.003
276	342	.240	.737	.012	.012	.977	.023
277	344	.189	.797	.012	.003	.985	.015
282	552	.364	.636	0.000	0.000	1.000	0.000
283	338	.095	.876	.030	0.000	.970	.030
285	506	.253	.733	.014	0.000	.986	.014
286	338	0.000	1.000	0.000	0.000	1.000	0.000
294	613	0.000	1.000	0.000	0.000	1.000	0.000
302	344	.186	.811	0.000	.003	.997	.003
305	346	.145	.853	.003	0.000	.997	.003
164	85	0.000	1.000	0.000	0.000	1.000	0.000
TOTAL	9925	.193	.790	.012	.005	.983	.017

Table 3d. Test results of the Distribution-Function Rise Algorithm with GAMMARI=4.5, for VCRIT=-1000V.

RESULTS FOR DISTRIBUTION FUNCTION RISE ALGORITHM

DAY	NSPEC	CHARGED	UNCHRGD	MISS-CH	F-ALARM	CORRECT	WRONG
86	568	0.000	.996	.004	0.000	.996	.004
87	284	.236	.725	.035	.004	.961	.039
98	246	.260	.724	.016	0.000	.984	.016
100	230	.035	.943	.013	.009	.978	.022
104	268	.313	.672	.015	0.000	.985	.015
105	220	.232	.745	.023	0.000	.977	.023
106	254	.583	.390	.028	0.000	.972	.028
108	267	.554	.434	.011	0.000	.989	.011
114	266	.429	.568	.004	0.000	.996	.004
117	250	0.000	1.000	0.000	0.000	1.000	0.000
118	179	0.000	1.000	0.000	0.000	1.000	0.000
120	280	0.000	.989	.007	.004	.989	.011
172	430	0.000	1.000	0.000	0.000	1.000	0.000
241	101	0.000	.970	.010	.020	.970	.030
267	333	0.000	1.000	0.000	0.000	1.000	0.000
270	355	.155	.780	.045	.020	.935	.065
271	582	.199	.759	.022	.019	.959	.041
272	342	.234	.734	.003	.029	.968	.032
273	330	.164	.755	.073	.009	.918	.082
274	332	.133	.861	.006	0.000	.994	.006
276	342	.187	.795	.006	.012	.982	.018
277	344	.160	.837	0.000	.003	.997	.003
282	552	.364	.636	0.000	0.000	1.000	0.000
283	338	0.000	.997	.003	0.000	.997	.003
285	506	.166	.824	.010	0.000	.990	.010
286	338	0.000	1.000	0.000	0.000	1.000	0.000
294	613	0.000	1.000	0.000	0.000	1.000	0.000
302	344	.169	.826	.006	0.000	.994	.006
305	346	.121	.879	0.000	0.000	1.000	0.000
164	85	0.000	1.000	0.000	0.000	1.000	0.000
TOTAL	9925	.155	.830	.011	.004	.985	.015

Table 3e. Test results of the Distribution-Function Rise Algorithm with GAMMARI=3.5, for VCRIT=-500V.

RESULTS FOR DISTRIBUTION FUNCTION RISE ALGORITHM

DAY	NSPEC	CHARGED	UNCHRGD	MISS-CH	F-ALARM	CORRECT	WRONG
86	568	.012	.970	.012	.005	.982	.018
87	284	.261	.669	.042	.028	.930	.070
98	246	.642	.346	.012	0.000	.988	.012
100	230	.178	.783	.017	.022	.961	.039
104	268	.634	.362	.004	0.000	.996	.004
105	220	.377	.623	0.000	0.000	1.000	0.000
106	254	.642	.346	.012	0.000	.988	.012
108	267	.566	.419	.015	0.000	.985	.015
114	266	.432	.553	.008	.008	.985	.015
117	250	.008	.980	.012	0.000	.988	.012
118	179	0.000	.994	0.000	.006	.994	.006
120	280	0.000	.979	.018	.004	.979	.021
172	430	0.000	.995	0.000	.005	.995	.005
241	101	.079	.851	.050	.020	.931	.069
267	333	0.000	.973	.003	.024	.973	.027
270	355	.437	.524	.003	.037	.961	.039
271	582	.215	.746	.010	.029	.960	.040
272	342	.313	.588	.035	.064	.901	.099
273	330	.270	.658	.027	.045	.927	.073
274	332	.178	.819	.003	0.000	.997	.003
276	342	.284	.675	.006	.035	.959	.041
277	344	.265	.721	.006	.009	.985	.015
282	552	.366	.632	.002	0.000	.998	.002
283	338	.186	.799	.009	.006	.985	.015
285	506	.324	.670	.006	0.000	.994	.006
286	338	0.000	.997	0.000	.003	.997	.003
294	613	0.000	.993	0.000	.007	.993	.007
302	344	.201	.788	.006	.006	.988	.012
305	346	.156	.832	.009	.003	.988	.012
164	85	0.000	1.000	0.000	0.000	1.000	0.000
TOTAL	9925	.226	.752	.010	.012	.978	.022

Table 3f. Test results of the Distribution-Function Rise Algorithm with GAMMARI=4.0, for VCRIT=-500V.

RESULTS FOR DISTRIBUTION FUNCTION RISE ALGORITHM

DAY	NSPEC	CHARGED	UNCHRGD	MISS-CH	F-ALARM	CORRECT	WRONG
86	568	.012	.972	.012	.004	.984	.016
87	284	.257	.680	.046	.018	.937	.063
98	246	.642	.346	.012	0.000	.988	.012
100	230	.183	.796	.013	.009	.978	.022
104	268	.634	.362	.004	0.000	.996	.004
105	220	.377	.623	0.000	0.000	1.000	0.000
106	254	.650	.346	.004	0.000	.996	.004
108	267	.562	.419	.019	0.000	.981	.019
114	266	.432	.560	.008	0.000	.992	.008
117	250	.008	.980	.012	0.000	.988	.012
118	179	0.000	.994	0.000	.006	.994	.006
120	280	0.000	.979	.018	.004	.979	.021
172	430	0.000	.998	0.000	.002	.998	.002
241	101	.089	.842	.040	.030	.931	.069
267	333	0.000	.988	.003	.009	.988	.012
270	355	.437	.527	.003	.034	.963	.037
271	582	.206	.756	.019	.019	.962	.038
272	342	.313	.602	.035	.050	.915	.085
273	330	.255	.679	.042	.024	.933	.067
274	332	.178	.819	.003	0.000	.997	.003
276	342	.287	.684	.003	.026	.971	.029
277	344	.265	.724	.006	.006	.988	.012
282	552	.368	.632	0.000	0.000	1.000	0.000
283	338	.183	.805	.012	0.000	.988	.012
285	506	.324	.670	.006	0.000	.994	.006
286	338	0.000	1.000	0.000	0.000	1.000	0.000
294	613	0.000	.998	0.000	.002	.998	.002
302	344	.201	.788	.006	.006	.988	.012
305	346	.165	.832	0.000	.003	.997	.003
164	85	0.000	1.000	0.000	0.000	1.000	0.000
TOTAL	9925	.226	.756	.010	.008	.982	.018

Table 3g. Test results of the Distribution-Function Rise Algorithm with GAMMARI=5.0, for VCRIT=-500V.

RESULTS FOR DISTRIBUTION FUNCTION RISE ALGORITHM

DAY	NSPEC	CHARGED	UNCHRGD	MISS-CH	F-ALARM	CORRECT	WRONG
86	568	.002	.975	.023	0.000	.977	.023
87	284	.239	.694	.063	.004	.933	.067
98	246	.642	.346	.012	0.000	.988	.012
100	230	.178	.800	.017	.004	.978	.022
104	268	.634	.362	.004	0.000	.996	.004
105	220	.377	.623	0.000	0.000	1.000	0.000
106	254	.650	.346	.004	0.000	.996	.004
108	267	.543	.419	.037	0.000	.963	.037
114	266	.432	.560	.008	0.000	.992	.008
117	250	.008	.980	.012	0.000	.988	.012
118	179	0.000	1.000	0.000	0.000	1.000	0.000
120	280	0.000	.979	.018	.004	.979	.021
172	430	0.000	.998	0.000	.002	.998	.002
241	101	.099	.842	.030	.030	.941	.059
267	333	0.000	.997	.003	0.000	.997	.003
270	355	.437	.544	.003	.017	.980	.020
271	582	.198	.761	.027	.014	.959	.041
272	342	.313	.632	.035	.020	.944	.056
273	330	.218	.691	.079	.012	.909	.091
274	332	.178	.819	.003	0.000	.997	.003
276	342	.289	.702	0.000	.009	.991	.009
277	344	.265	.730	.006	0.000	.994	.006
282	552	.368	.632	0.000	0.000	1.000	0.000
283	338	.169	.805	.027	0.000	.973	.027
285	506	.324	.670	.006	0.000	.994	.006
286	338	0.000	1.000	0.000	0.000	1.000	0.000
294	613	0.000	1.000	0.000	0.000	1.000	0.000
302	344	.201	.788	.006	.006	.988	.012
305	346	.165	.835	0.000	0.000	1.000	0.000
164	85	0.000	1.000	0.000	0.000	1.000	0.000
TOTAL	9925	.222	.760	.014	.004	.983	.017

Table 4a. Test results of the Count Rise Algorithm, with RISEFAC=3.0 and ICMIN=50 for VCRIT=-250V.

RESULTS FOR COUNT RISE ALGORITHM

DAY	NSPEC	CHARGED	UNCHRGD	MISS-CH	F-ALARM	CORRECT	WRONG
86	568	.012	.949	.037	.002	.961	.039
87	284	.250	.683	.053	.014	.933	.067
98	246	.715	.285	0.000	0.000	1.000	0.000
100	230	.226	.735	.017	.022	.961	.039
104	268	.646	.351	.004	0.000	.996	.004
105	220	.673	.309	.014	.005	.982	.018
106	254	.673	.327	0.000	0.000	1.000	0.000
108	267	.551	.408	.037	.004	.959	.041
114	266	.436	.530	.034	0.000	.966	.034
117	250	.244	.672	.084	0.000	.916	.084
118	179	0.000	.989	.006	.006	.989	.011
120	280	0.000	.975	.018	.007	.975	.025
172	430	.002	.995	.002	0.000	.998	.002
241	101	.386	.426	.178	.010	.812	.188
267	333	.012	.952	.024	.012	.964	.036
270	355	.439	.530	.003	.028	.969	.031
271	582	.203	.753	.034	.010	.955	.045
272	342	.482	.494	0.000	.023	.977	.023
273	330	.227	.679	.073	.021	.906	.094
274	332	.199	.774	.024	.003	.973	.027
276	342	.304	.678	.006	.012	.982	.018
277	344	.433	.549	.012	.006	.983	.017
282	552	.370	.629	.002	0.000	.998	.002
283	338	.411	.571	.018	0.000	.982	.018
285	506	.368	.632	0.000	0.000	1.000	0.000
286	338	.154	.808	.038	0.000	.962	.038
294	613	0.000	1.000	0.000	0.000	1.000	0.000
302	344	.227	.770	0.000	.003	.997	.003
305	346	.173	.824	.003	0.000	.997	.003
164	85	0.000	1.000	0.000	0.000	1.000	0.000
TOTAL	9925	.274	.700	.020	.006	.974	.026

Table 4b. Test results of the Count Rise Algorithm, with RISEFAC=3.0 and ICMIN=50 for VCRIT=-500V.

RESULTS FOR COUNT RISE ALGORITHM

DAY	NSPEC	CHARGED	UNCHRGD	MISS-CH	F-ALARM	CORRECT	WRONG
86	568	.002	.974	.023	.002	.975	.025
87	284	.250	.683	.053	.014	.933	.067
98	246	.650	.346	.004	0.000	.996	.004
100	230	.178	.791	.017	.013	.970	.030
104	268	.634	.362	.004	0.000	.996	.004
105	220	.377	.623	0.000	0.000	1.000	0.000
106	254	.650	.346	.004	0.000	.996	.004
108	267	.547	.416	.034	.004	.963	.037
114	266	.436	.560	.004	0.000	.996	.004
117	250	.012	.980	.008	0.000	.992	.008
118	179	0.000	.994	0.000	.006	.994	.006
120	280	0.000	.975	.018	.007	.975	.025
172	430	0.000	1.000	0.000	0.000	1.000	0.000
241	101	.069	.861	.059	.010	.931	.069
267	333	0.000	.988	.003	.009	.988	.012
270	355	.437	.538	.003	.023	.975	.025
271	582	.198	.766	.027	.009	.964	.036
272	342	.330	.629	.018	.023	.959	.041
273	330	.227	.688	.070	.015	.915	.085
274	332	.181	.819	0.000	0.000	1.000	0.000
276	342	.289	.699	0.000	.012	.988	.012
277	344	.262	.724	.009	.006	.985	.015
282	552	.368	.632	0.000	0.000	1.000	0.000
283	338	.175	.805	.021	0.000	.979	.021
285	506	.328	.670	.002	0.000	.998	.002
286	338	0.000	1.000	0.000	0.000	1.000	0.000
294	613	0.000	1.000	0.000	0.000	1.000	0.000
302	344	.201	.788	.006	.006	.988	.012
305	346	.165	.835	0.000	0.000	1.000	0.000
164	85	0.000	1.000	0.000	0.000	1.000	0.000
TOTAL	9925	.224	.759	.012	.005	.983	.017

Table 4c. Test results of the Count Rise Algorithm, with RISEFAC=3.0 and ICMIN=50 for VCRIT=-750V.

RESULTS FOR COUNT RISE ALGORITHM

DAY	NSPEC	CHARGED	UNCHRGD	MISS-CH	F-ALARM	CORRECT	WRONG
86	568	0.000	.995	.005	0.000	.995	.005
87	284	.243	.690	.056	.011	.933	.067
98	246	.378	.610	.012	0.000	.988	.012
100	230	.122	.852	.013	.013	.974	.026
104	268	.593	.388	.019	0.000	.981	.019
105	220	.286	.714	0.000	0.000	1.000	0.000
106	254	.634	.362	.004	0.000	.996	.004
108	267	.543	.423	.030	.004	.966	.034
114	266	.432	.564	.004	0.000	.996	.004
117	250	0.000	1.000	0.000	0.000	1.000	0.000
118	179	0.000	.994	0.000	.006	.994	.006
120	280	0.000	.975	.018	.007	.975	.025
172	430	0.000	1.000	0.000	0.000	1.000	0.000
241	101	.010	.950	.040	0.000	.960	.040
267	333	0.000	.994	.003	.003	.994	.006
270	355	.392	.583	.014	.011	.975	.025
271	582	.198	.766	.027	.009	.964	.036
272	342	.257	.722	0.000	.020	.980	.020
273	330	.218	.706	.067	.009	.924	.076
274	332	.163	.837	0.000	0.000	1.000	0.000
276	342	.243	.740	.009	.009	.982	.018
277	344	.192	.794	.009	.006	.985	.015
282	552	.364	.636	0.000	0.000	1.000	0.000
283	338	.112	.876	.012	0.000	.988	.012
285	506	.265	.733	.002	0.000	.998	.002
286	338	0.000	1.000	0.000	0.000	1.000	0.000
294	613	0.000	1.000	0.000	0.000	1.000	0.000
302	344	.186	.811	0.000	.003	.997	.003
305	346	.147	.853	0.000	0.000	1.000	0.000
164	85	0.000	1.000	0.000	0.000	1.000	0.000
TOTAL	9925	.195	.791	.010	.004	.986	.014

Table 4d. Test results of the Count Rise Algorithm, with RISEFAC=3.0 and ICMIN=50 for VCRIT=-1000V.

RESULTS FOR COUNT RISE ALGORITHM

DAY	NSPEC	CHARGED	UNCHRGD	MISS-CH	F-ALARM	CORRECT	WRONG
86	568	0.000	.996	.004	0.000	.996	.004
87	284	.232	.718	.039	.011	.951	.049
98	246	.268	.724	.008	0.000	.992	.008
100	230	.035	.939	.013	.013	.974	.026
104	268	.325	.672	.004	0.000	.996	.004
105	220	.250	.745	.005	0.000	.995	.005
106	254	.602	.390	.008	0.000	.992	.008
108	267	.543	.431	.022	.004	.974	.026
114	266	.429	.568	.004	0.000	.996	.004
117	250	0.000	1.000	0.000	0.000	1.000	0.000
118	179	0.000	.994	0.000	.006	.994	.006
120	280	0.000	.986	.007	.007	.986	.014
172	430	0.000	1.000	0.000	0.000	1.000	0.000
241	101	0.000	.990	.010	0.000	.990	.010
267	333	0.000	.997	0.000	.003	.997	.003
270	355	.172	.789	.028	.011	.961	.039
271	582	.196	.770	.026	.009	.966	.034
272	342	.234	.746	.003	.018	.980	.020
273	330	.173	.755	.064	.009	.927	.073
274	332	.136	.861	.003	0.000	.997	.003
276	342	.190	.801	.003	.006	.991	.009
277	344	.154	.834	.006	.006	.988	.012
282	552	.364	.636	0.000	0.000	1.000	0.000
283	338	0.000	.997	.003	0.000	.997	.003
285	506	.168	.824	.008	0.000	.992	.008
286	338	0.000	1.000	0.000	0.000	1.000	0.000
294	613	0.000	1.000	0.000	0.000	1.000	0.000
302	344	.172	.826	.003	0.000	.997	.003
305	346	.121	.879	0.000	0.000	1.000	0.000
164	85	0.000	1.000	0.000	0.000	1.000	0.000
TOTAL	9925	.157	.831	.009	.003	.988	.012

Table 5a. Test results of the Count-Rise Product Algorithm with RISEFAC=3 and ICMIN=90, for VCRIT=-250V.

RESULTS FOR COUNT RISE PRODUCT ALGORITHM

DAY	NSPEC	CHARGED	UNCHRGD	MISS-CH	F-ALARM	CORRECT	WRONG
86	568	.019	.947	.030	.004	.967	.033
87	284	.257	.690	.046	.007	.947	.053
98	246	.715	.285	0.000	0.000	1.000	0.000
100	230	.230	.748	.013	.009	.978	.022
104	268	.646	.351	.004	0.000	.996	.004
105	220	.673	.309	.014	.005	.982	.018
106	254	.673	.327	0.000	0.000	1.000	0.000
108	267	.562	.412	.026	0.000	.974	.026
114	266	.436	.530	.034	0.000	.966	.034
117	250	.256	.672	.072	0.000	.928	.072
118	179	0.000	.994	.006	0.000	.994	.006
120	280	0.000	.979	.018	.004	.979	.021
172	430	.002	.993	.002	.002	.995	.005
241	101	.416	.426	.149	.010	.842	.158
267	333	.009	.955	.027	.009	.964	.036
270	355	.439	.538	.003	.020	.977	.023
271	582	.204	.753	.033	.010	.957	.043
272	342	.482	.497	0.000	.020	.980	.020
273	330	.242	.682	.058	.018	.924	.076
274	332	.199	.774	.024	.003	.973	.027
276	342	.298	.681	.012	.009	.980	.020
277	344	.439	.552	.006	.003	.991	.009
282	552	.370	.629	.002	0.000	.998	.002
283	338	.414	.571	.015	0.000	.985	.015
285	506	.368	.632	0.000	0.000	1.000	0.000
286	338	.154	.808	.038	0.000	.962	.038
294	613	0.000	1.000	0.000	0.000	1.000	0.000
302	344	.227	.770	0.000	.003	.997	.003
305	346	.168	.824	.009	0.000	.991	.009
164	85	0.000	1.000	0.000	0.000	1.000	0.000
TOTAL	9925	.276	.702	.018	.005	.978	.022

Table 5b. Test results of the Count-Rise Product Algorithm with RISEFAC=3 and ICMIN=90, for VCRIT=-500V.

RESULTS FOR COUNT RISE PRODUCT ALGORITHM

DAY	NSPEC	CHARGED	UNCHRGD	MISS-CH	F-ALARM	CORRECT	WRONG
86	568	.007	.974	.018	.002	.981	.019
87	284	.257	.690	.046	.007	.947	.053
98	246	.650	.346	.004	0.000	.996	.004
100	230	.178	.800	.017	.004	.978	.022
104	268	.634	.362	.004	0.000	.996	.004
105	220	.377	.623	0.000	0.000	1.000	0.000
106	254	.650	.346	.004	0.000	.996	.004
108	267	.558	.419	.022	0.000	.978	.022
114	266	.436	.560	.004	0.000	.996	.004
117	250	.012	.980	.008	0.000	.992	.008
118	179	0.000	1.000	0.000	0.000	1.000	0.000
120	280	0.000	.979	.018	.004	.979	.021
172	430	0.000	.998	0.000	.002	.998	.002
241	101	.069	.861	.059	.010	.931	.069
267	333	0.000	.988	.003	.009	.988	.012
270	355	.437	.544	.003	.017	.980	.020
271	582	.199	.766	.026	.009	.966	.034
272	342	.330	.632	.018	.020	.962	.038
273	330	.242	.688	.055	.015	.930	.070
274	332	.181	.819	0.000	0.000	1.000	0.000
276	342	.287	.702	.003	.009	.988	.012
277	344	.267	.727	.003	.003	.994	.006
282	552	.368	.632	0.000	0.000	1.000	0.000
283	338	.180	.805	.015	0.000	.985	.015
285	506	.328	.670	.002	0.000	.998	.002
286	338	0.000	1.000	0.000	0.000	1.000	0.000
294	613	0.000	1.000	0.000	0.000	1.000	0.000
302	344	.201	.788	.006	.006	.988	.012
305	346	.165	.835	0.000	0.000	1.000	0.000
164	85	0.000	1.000	0.000	0.000	1.000	0.000
TOTAL	9925	.226	.760	.010	.004	.986	.014

Table 5c. Test results of the Count-Rise Product Algorithm with RISEFAC=3 and ICMIN=90, for VCRIT=-750V.

RESULTS FOR COUNT RISE PRODUCT ALGORITHM

DAY	NSPEC	CHARGED	UNCHRGD	MISS-CH	F-ALARM	CORRECT	WRONG
86	568	0.000	.995	.005	0.000	.995	.005
87	284	.250	.697	.049	.004	.947	.053
98	246	.378	.610	.012	0.000	.988	.012
100	230	.122	.861	.013	.004	.983	.017
104	268	.593	.388	.019	0.000	.981	.019
105	220	.286	.714	0.000	0.000	1.000	0.000
106	254	.634	.362	.004	0.000	.996	.004
108	267	.554	.427	.019	0.000	.981	.019
114	266	.432	.564	.004	0.000	.996	.004
117	250	0.000	1.000	0.000	0.000	1.000	0.000
118	179	0.000	1.000	0.000	0.000	1.000	0.000
120	280	0.000	.979	.018	.004	.979	.021
172	430	0.000	.998	0.000	.002	.998	.002
241	101	.010	.950	.040	0.000	.960	.040
267	333	0.000	.994	.003	.003	.994	.006
270	355	.392	.583	.014	.011	.975	.025
271	582	.199	.766	.026	.009	.966	.034
272	342	.257	.725	0.000	.018	.982	.018
273	330	.230	.703	.055	.012	.933	.067
274	332	.163	.837	0.000	0.000	1.000	0.000
276	342	.243	.743	.009	.006	.985	.015
277	344	.198	.797	.003	.003	.994	.006
282	552	.364	.636	0.000	0.000	1.000	0.000
283	338	.115	.876	.009	0.000	.991	.009
285	506	.265	.733	.002	0.000	.998	.002
286	338	0.000	1.000	0.000	0.000	1.000	0.000
294	613	0.000	1.000	0.000	0.000	1.000	0.000
302	344	.186	.811	0.000	.003	.997	.003
305	346	.147	.853	0.000	0.000	1.000	0.000
164	85	0.000	1.000	0.000	0.000	1.000	0.000
TOTAL	9925	.197	.791	.009	.003	.988	.012

Table 5d. Test results of the Count-Rise Product Algorithm with RISEFAC=3 and ICMIN=90, for VCRIT=-1000V.

RESULTS FOR COUNT RISE PRODUCT ALGORITHM

DAY	NSPEC	CHARGED	UNCHRGD	MISS-CH	F-ALARM	CORRECT	WRONG
86	568	0.000	.996	.004	0.000	.996	.004
87	284	.236	.725	.035	.004	.961	.039
98	246	.268	.724	.008	0.000	.992	.008
100	230	.035	.948	.013	.004	.983	.017
104	268	.325	.672	.004	0.000	.996	.004
105	220	.250	.745	.005	0.000	.995	.005
106	254	.602	.390	.008	0.000	.992	.008
108	267	.554	.434	.011	0.000	.989	.011
114	266	.429	.568	.004	0.000	.996	.004
117	250	0.000	1.000	0.000	0.000	1.000	0.000
118	179	0.000	1.000	0.000	0.000	1.000	0.000
120	280	0.000	.989	.007	.004	.989	.011
172	430	0.000	1.000	0.000	0.000	1.000	0.000
241	101	0.000	.990	.010	0.000	.990	.010
267	333	0.000	.997	0.000	.003	.997	.003
270	355	.172	.789	.028	.011	.961	.039
271	582	.196	.770	.026	.009	.966	.034
272	342	.234	.749	.003	.015	.982	.018
273	330	.176	.755	.061	.009	.930	.070
274	332	.136	.861	.003	0.000	.997	.003
276	342	.190	.801	.003	.006	.991	.009
277	344	.160	.837	0.000	.003	.997	.003
282	552	.364	.636	0.000	0.000	1.000	0.000
283	338	0.000	.997	.003	0.000	.997	.003
285	506	.168	.824	.008	0.000	.992	.008
286	338	0.000	1.000	0.000	0.000	1.000	0.000
294	613	0.000	1.000	0.000	0.000	1.000	0.000
302	344	.172	.826	.003	0.000	.997	.003
305	346	.121	.879	0.000	0.000	1.000	0.000
164	85	0.000	1.000	0.000	0.000	1.000	0.000
TOTAL	9925	.157	.832	.008	.002	.989	.011

Table 6. Comparison of Algorithm Success Rates for VCRIT = -500V (in Percent)

Algorithm	Vehicle Charged	Vehicle Uncharged	Overall
Count Drop: *DROPFAC=.6*, ICMIN=90,			
Highest Peak	93.5	90.3	91.0
Lowest Peak	91.5	95.0	94.6
Distribution-Function Drop:			
GRAMMADR=4.0	95.3	92.6	93.3
GRAMMADR=5.5	89.8	97.1	95.4
Distribution-Function Rise:			
GAMMARI=4.0	95.8	99.0	98.2
GAMMARI=4.5	94.9	99.3	98.3
Count Rise:			
RISEFAC=4, ICMIN=90	88.6	99.7	97.2
RISEFAC=3, ICMIN=50	94.9	99.3	98.3
Count-Rise Product:			
RISEFAC=3, ICMIN=90	95.8	99.5	98.6

Table 7a. Results of the Count-Rise Product and Count Drop Algorithms for individual spectra on Day 79114, for VCRIT=-500V.

DAY	TIME	V EST	V CT PROD RI		V COUNT DROP	
114.	21632.	0.	0.	OK NO CHG	0.	OK NO CHG
114.	21663.	0.	0.	OK NO CHG	0.	OK NO CHG
114.	21694.	0.	0.	OK NO CHG	0.	OK NO CHG
114.	21725.	0.	0.	OK NO CHG	0.	OK NO CHG
114.	21756.	0.	0.	OK NO CHG	0.	OK NO CHG
114.	21787.	0.	0.	OK NO CHG	0.	OK NO CHG
114.	21818.	0.	0.	OK NO CHG	0.	OK NO CHG
114.	21849.	0.	0.	OK NO CHG	0.	OK NO CHG
114.	21880.	0.	0.	OK NO CHG	0.	OK NO CHG
114.	21911.	0.	0.	OK NO CHG	0.	OK NO CHG
114.	21942.	0.	0.	OK NO CHG	0.	OK NO CHG
114.	21973.	0.	0.	OK NO CHG	0.	OK NO CHG
114.	22004.	0.	0.	OK NO CHG	0.	OK NO CHG
114.	22035.	0.	0.	OK NO CHG	0.	OK NO CHG
114.	22066.	0.	0.	OK NO CHG	0.	OK NO CHG
114.	22097.	0.	0.	OK NO CHG	0.	OK NO CHG
114.	22128.	0.	0.	OK NO CHG	0.	OK NO CHG
114.	22159.	0.	0.	OK NO CHG	0.	OK NO CHG
114.	22190.	0.	0.	OK NO CHG	0.	OK NO CHG
114.	22221.	0.	0.	OK NO CHG	0.	OK NO CHG
114.	22252.	0.	0.	OK NO CHG	0.	OK NO CHG
114.	22283.	0.	0.	OK NO CHG	0.	OK NO CHG
114.	22314.	0.	0.	OK NO CHG	0.	OK NO CHG
114.	22345.	0.	0.	OK NO CHG	0.	OK NO CHG
114.	22407.	0.	0.	OK NO CHG	0.	OK NO CHG
114.	22438.	0.	0.	OK NO CHG	0.	OK NO CHG
114.	22469.	0.	0.	OK NO CHG	0.	OK NO CHG
114.	22500.	0.	0.	OK NO CHG	0.	OK NO CHG
114.	22531.	0.	0.	OK NO CHG	0.	OK NO CHG

(continued)

Table 7a. (cont.)

DAY	TIME	V EST	V CT PROD RI		V COUNT DROP	
114.	22562.	0.	0.	OK NO CHG	0.	OK NO CHG
114.	22593.	0.	0.	OK NO CHG	0.	OK NO CHG
114.	22624.	0.	0.	OK NO CHG	0.	OK NO CHG
114.	22655.	0.	0.	OK NO CHG	0.	OK NO CHG
114.	22686.	0.	0.	OK NO CHG	0.	OK NO CHG
114.	22717.	0.	0.	OK NO CHG	0.	OK NO CHG
114.	22748.	0.	0.	OK NO CHG	0.	OK NO CHG
114.	22779.	0.	0.	OK NO CHG	0.	OK NO CHG
114.	22810.	0.	34.	OK NO CHG	0.	OK NO CHG
114.	22841.	0.	0.	OK NO CHG	0.	OK NO CHG
114.	22872.	0.	0.	OK NO CHG	0.	OK NO CHG
114.	22903.	0.	0.	OK NO CHG	0.	OK NO CHG
114.	22934.	0.	0.	OK NO CHG	0.	OK NO CHG
114.	22965.	0.	0.	OK NO CHG	0.	OK NO CHG
114.	22996.	0.	0.	OK NO CHG	0.	OK NO CHG
114.	23027.	0.	0.	OK NO CHG	0.	OK NO CHG
114.	23058.	0.	0.	OK NO CHG	0.	OK NO CHG
114.	23089.	0.	0.	OK NO CHG	0.	OK NO CHG
114.	23120.	0.	0.	OK NO CHG	0.	OK NO CHG
114.	23151.	0.	0.	OK NO CHG	0.	OK NO CHG
114.	23182.	0.	0.	OK NO CHG	7109.	--FALSE CH
114.	23213.	0.	0.	OK NO CHG	6206.	--FALSE CH
114.	23244.	0.	0.	OK NO CHG	7109.	--FALSE CH
114.	23275.	0.	0.	OK NO CHG	0.	OK NO CHG
114.	23306.	0.	0.	OK NO CHG	0.	OK NO CHG
114.	23337.	0.	0.	OK NO CHG	0.	OK NO CHG
114.	23368.	0.	0.	OK NO CHG	0.	OK NO CHG
114.	23399.	0.	0.	OK NO CHG	0.	OK NO CHG
114.	23430.	0.	0.	OK NO CHG	0.	OK NO CHG
114.	23461.	0.	0.	OK NO CHG	0.	OK NO CHG
114.	23492.	0.	0.	OK NO CHG	0.	OK NO CHG
114.	23523.	0.	0.	OK NO CHG	0.	OK NO CHG
114.	23554.	0.	0.	OK NO CHG	0.	OK NO CHG
114.	23585.	0.	0.	OK NO CHG	0.	OK NO CHG
114.	23616.	0.	0.	OK NO CHG	0.	OK NO CHG
114.	23647.	0.	0.	OK NO CHG	0.	OK NO CHG
114.	23678.	0.	0.	OK NO CHG	0.	OK NO CHG
114.	23709.	0.	0.	OK NO CHG	0.	OK NO CHG
114.	23740.	0.	0.	OK NO CHG	0.	OK NO CHG
114.	23771.	0.	0.	OK NO CHG	0.	OK NO CHG
114.	23802.	0.	0.	OK NO CHG	0.	OK NO CHG
114.	23833.	0.	0.	OK NO CHG	0.	OK NO CHG
114.	23864.	0.	0.	OK NO CHG	0.	OK NO CHG
114.	23895.	0.	0.	OK NO CHG	0.	OK NO CHG
114.	23926.	0.	0.	OK NO CHG	0.	OK NO CHG
114.	23957.	0.	0.	OK NO CHG	0.	OK NO CHG
114.	23988.	0.	0.	OK NO CHG	0.	OK NO CHG
114.	24019.	0.	0.	OK NO CHG	0.	OK NO CHG
114.	24050.	0.	0.	OK NO CHG	0.	OK NO CHG
114.	24081.	0.	0.	OK NO CHG	0.	OK NO CHG
114.	24112.	0.	0.	OK NO CHG	0.	OK NO CHG
114.	24143.	0.	0.	OK NO CHG	0.	OK NO CHG
114.	24174.	0.	0.	OK NO CHG	0.	OK NO CHG
114.	24205.	0.	0.	OK NO CHG	0.	OK NO CHG
114.	24236.	34.	0.	OK NO CHG	0.	OK NO CHG
114.	24267.	42.	0.	OK NO CHG	0.	OK NO CHG
114.	24298.	61.	0.	OK NO CHG	0.	OK NO CHG
114.	24329.	51.	51.	OK NO CHG	0.	OK NO CHG
114.	24360.	102.	102.	OK NO CHG	0.	OK NO CHG
114.	24391.	73.	0.	OK NO CHG	0.	OK NO CHG

Table 7a. (cont.)

DAY	TIME	V EST	V CT	PROD RI	V COUNT	DROP
114.	24422.	102.	0.	OK NO CHG	0.	OK NO CHG
114.	24453.	140.	0.	OK NO CHG	0.	OK NO CHG
114.	24484.	120.	0.	OK NO CHG	0.	OK NO CHG
114.	24515.	73.	0.	OK NO CHG	0.	OK NO CHG
114.	24546.	140.	0.	OK NO CHG	0.	OK NO CHG
114.	24577.	140.	0.	OK NO CHG	0.	OK NO CHG
114.	24639.	296.	0.	OK NO CHG	0.	OK NO CHG
114.	24670.	221.	0.	OK NO CHG	0.	OK NO CHG
114.	24701.	342.	0.	OK NO CHG	0.	OK NO CHG
114.	24732.	163.	163.	OK NO CHG	0.	OK NO CHG
114.	24763.	256.	0.	OK NO CHG	0.	OK NO CHG
114.	24794.	140.	140.	OK NO CHG	0.	OK NO CHG
114.	24825.	256.	221.	OK NO CHG	0.	OK NO CHG
114.	24856.	120.	61.	OK NO CHG	0.	OK NO CHG
114.	24887.	140.	0.	OK NO CHG	0.	OK NO CHG
114.	24918.	86.	86.	OK NO CHG	0.	OK NO CHG
114.	24949.	120.	0.	OK NO CHG	0.	OK NO CHG
114.	24980.	163.	0.	OK NO CHG	190.	OK NO CHG
114.	25011.	102.	0.	OK NO CHG	0.	OK NO CHG
114.	25042.	163.	0.	OK NO CHG	0.	OK NO CHG
114.	25073.	120.	0.	OK NO CHG	0.	OK NO CHG
114.	25104.	140.	0.	OK NO CHG	0.	OK NO CHG
114.	25135.	163.	0.	OK NO CHG	0.	OK NO CHG
114.	25160.	0.	0.	OK NO CHG	0.	OK NO CHG
114.	25176.	140.	0.	OK NO CHG	0.	OK NO CHG
114.	25192.	73.	0.	OK NO CHG	0.	OK NO CHG
114.	25208.	256.	0.	OK NO CHG	394.	OK NO CHG
114.	25224.	140.	0.	OK NO CHG	0.	OK NO CHG
114.	25240.	120.	0.	OK NO CHG	0.	OK NO CHG
114.	25256.	102.	0.	OK NO CHG	0.	OK NO CHG
114.	25272.	190.	163.	OK NO CHG	190.	OK NO CHG
114.	25288.	120.	120.	OK NO CHG	0.	OK NO CHG
114.	25304.	140.	120.	OK NO CHG	140.	OK NO CHG
114.	25320.	120.	0.	OK NO CHG	0.	OK NO CHG
114.	25336.	190.	0.	OK NO CHG	0.	OK NO CHG
114.	25352.	190.	0.	OK NO CHG	0.	OK NO CHG
114.	25368.	102.	0.	OK NO CHG	0.	OK NO CHG
114.	25384.	190.	0.	OK NO CHG	0.	OK NO CHG
114.	25400.	190.	0.	OK NO CHG	0.	OK NO CHG
114.	25416.	140.	0.	OK NO CHG	0.	OK NO CHG
114.	25432.	120.	0.	OK NO CHG	0.	OK NO CHG
114.	25448.	0.	0.	OK NO CHG	0.	OK NO CHG
114.	25464.	190.	190.	OK NO CHG	0.	OK NO CHG
114.	25480.	120.	0.	OK NO CHG	0.	OK NO CHG
114.	25496.	256.	0.	OK NO CHG	0.	OK NO CHG
114.	25512.	163.	0.	OK NO CHG	0.	OK NO CHG
114.	25528.	140.	0.	OK NO CHG	0.	OK NO CHG
114.	25544.	102.	0.	OK NO CHG	102.	OK NO CHG
114.	25560.	221.	221.	OK NO CHG	0.	OK NO CHG
114.	25576.	140.	0.	OK NO CHG	0.	OK NO CHG
114.	25592.	102.	0.	OK NO CHG	0.	OK NO CHG
114.	25608.	102.	102.	OK NO CHG	102.	OK NO CHG
114.	25624.	140.	0.	OK NO CHG	0.	OK NO CHG
114.	25640.	0.	0.	OK NO CHG	0.	OK NO CHG
114.	25656.	86.	86.	OK NO CHG	0.	OK NO CHG
114.	25672.	163.	0.	OK NO CHG	0.	OK NO CHG
114.	25688.	120.	0.	OK NO CHG	0.	OK NO CHG
114.	25704.	102.	0.	OK NO CHG	0.	OK NO CHG
114.	25720.	0.	0.	OK NO CHG	0.	OK NO CHG
114.	25736.	0.	0.	OK NO CHG	0.	OK NO CHG

Table 7a. (cont.)

DAY	TIME	V EST	V CT PROD RI		V COUNT DROP	
114.	25752.	0.	0.	OK NO CHG	0.	OK NO CHG
114.	25768.	51.	0.	OK NO CHG	0.	OK NO CHG
114.	25784.	0.	0.	OK NO CHG	0.	OK NO CHG
114.	25800.	0.	0.	OK NO CHG	0.	OK NO CHG
114.	25816.	0.	0.	OK NO CHG	0.	OK NO CHG
114.	25832.	0.	0.	OK NO CHG	0.	OK NO CHG
114.	25848.	0.	0.	OK NO CHG	0.	OK NO CHG
114.	25864.	0.	0.	OK NO CHG	0.	OK NO CHG
114.	25880.	342.	0.	OK NO CHG	0.	OK NO CHG
114.	25896.	394.	0.	OK NO CHG	0.	OK NO CHG
114.	25912.	454.	0.	OK NO CHG	0.	OK NO CHG
114.	25928.	523.	523.	OK CHARGE	602.	OK CHARGE
114.	25944.	0.	0.	OK NO CHG	0.	OK NO CHG
114.	25960.	2743.	2743.	OK CHARGE	2743.	OK CHARGE
114.	25976.	5417.	5417.	OK CHARGE	5417.	OK CHARGE
114.	25992.	7109.	5417.	OK CHARGE	8143.	OK CHARGE
114.	26008.	5417.	5417.	OK CHARGE	5417.	OK CHARGE
114.	26024.	5417.	5417.	OK CHARGE	5417.	OK CHARGE
114.	26040.	5417.	4729.	OK CHARGE	5417.	OK CHARGE
114.	26056.	5417.	4729.	OK CHARGE	5417.	OK CHARGE
114.	26072.	5417.	5417.	OK CHARGE	5417.	OK CHARGE
114.	26088.	4127.	4127.	OK CHARGE	4729.	OK CHARGE
114.	26104.	3602.	3602.	OK CHARGE	3602.	OK CHARGE
114.	26120.	4127.	4127.	OK CHARGE	4127.	OK CHARGE
114.	26136.	4729.	4729.	OK CHARGE	4729.	OK CHARGE
114.	26152.	4729.	4729.	OK CHARGE	5417.	OK CHARGE
114.	26168.	5417.	5417.	OK CHARGE	5417.	OK CHARGE
114.	26184.	5417.	4729.	OK CHARGE	5417.	OK CHARGE
114.	26200.	4729.	4729.	OK CHARGE	4729.	OK CHARGE
114.	26216.	5417.	4729.	OK CHARGE	5417.	OK CHARGE
114.	26232.	4729.	4729.	OK CHARGE	4729.	OK CHARGE
114.	26248.	4729.	4729.	OK CHARGE	4729.	OK CHARGE
114.	26264.	4729.	4729.	OK CHARGE	4729.	OK CHARGE
114.	26280.	5417.	5417.	OK CHARGE	5417.	OK CHARGE
114.	26296.	4729.	4729.	OK CHARGE	4729.	OK CHARGE
114.	26312.	4729.	4729.	OK CHARGE	4729.	OK CHARGE
114.	26328.	4729.	4729.	OK CHARGE	5417.	OK CHARGE
114.	26344.	4729.	4729.	OK CHARGE	4729.	OK CHARGE
114.	26360.	4729.	4729.	OK CHARGE	4729.	OK CHARGE
114.	26376.	4729.	4729.	OK CHARGE	4729.	OK CHARGE
114.	26392.	4729.	4729.	OK CHARGE	4729.	OK CHARGE
114.	26408.	4729.	4729.	OK CHARGE	4729.	OK CHARGE
114.	26424.	5417.	5417.	OK CHARGE	6206.	OK CHARGE
114.	26440.	7109.	6206.	OK CHARGE	7109.	OK CHARGE
114.	26456.	7109.	7109.	OK CHARGE	7109.	OK CHARGE
114.	26472.	7109.	7109.	OK CHARGE	8143.	OK CHARGE
114.	26488.	8143.	8143.	OK CHARGE	8143.	OK CHARGE
114.	26504.	7109.	7109.	OK CHARGE	7109.	OK CHARGE
114.	26520.	7109.	7109.	OK CHARGE	8143.	OK CHARGE
114.	26536.	7109.	7109.	OK CHARGE	7109.	OK CHARGE
114.	26552.	7109.	7109.	OK CHARGE	7109.	OK CHARGE
114.	26568.	7109.	7109.	OK CHARGE	7109.	OK CHARGE
114.	26584.	6206.	6206.	OK CHARGE	6206.	OK CHARGE
114.	26600.	6206.	6206.	OK CHARGE	6206.	OK CHARGE
114.	26616.	5417.	5417.	OK CHARGE	5417.	OK CHARGE
114.	26632.	5417.	5417.	OK CHARGE	5417.	OK CHARGE
114.	26648.	5417.	5417.	OK CHARGE	0.	--MISS CHG
114.	26664.	5417.	5417.	OK CHARGE	5417.	OK CHARGE
114.	26680.	5417.	5417.	OK CHARGE	0.	--MISS CHG
114.	26696.	6206.	6206.	OK CHARGE	6206.	OK CHARGE

Table 7a. (cont.)

DAY	TIME	V EST	V CT	PROD RI	V COUNT	DROP
114.	26712.	6206.	6206.	OK CHARGE	6206.	OK CHARGE
114.	26728.	7109.	7109.	OK CHARGE	7109.	OK CHARGE
114.	26744.	7109.	7109.	OK CHARGE	7109.	OK CHARGE
114.	26760.	9326.	7109.	OK CHARGE	0.	--MISS CHG
114.	26776.	7109.	7109.	OK CHARGE	7109.	OK CHARGE
114.	26792.	7109.	7109.	OK CHARGE	7109.	OK CHARGE
114.	26808.	7109.	6206.	OK CHARGE	7109.	OK CHARGE
114.	26824.	7109.	5417.	OK CHARGE	5417.	OK CHARGE
114.	26840.	5417.	5417.	OK CHARGE	6206.	OK CHARGE
114.	26856.	5417.	5417.	OK CHARGE	6206.	OK CHARGE
114.	26872.	5417.	5417.	OK CHARGE	5417.	OK CHARGE
114.	26888.	5417.	5417.	OK CHARGE	5417.	OK CHARGE
114.	26904.	4729.	4729.	OK CHARGE	4729.	OK CHARGE
114.	26920.	4729.	4729.	OK CHARGE	5417.	OK CHARGE
114.	26936.	4729.	4127.	OK CHARGE	4729.	OK CHARGE
114.	26952.	4729.	4127.	OK CHARGE	4729.	OK CHARGE
114.	26968.	5417.	5417.	OK CHARGE	7109.	OK CHARGE
114.	26984.	6206.	6206.	OK CHARGE	6206.	OK CHARGE
114.	27000.	6206.	6206.	OK CHARGE	6206.	OK CHARGE
114.	27016.	6206.	6206.	OK CHARGE	7109.	OK CHARGE
114.	27032.	5417.	5417.	OK CHARGE	6206.	OK CHARGE
114.	27048.	8143.	7109.	OK CHARGE	7109.	OK CHARGE
114.	27064.	8143.	7109.	OK CHARGE	7109.	OK CHARGE
114.	27080.	8143.	7109.	OK CHARGE	8143.	OK CHARGE
114.	27096.	8143.	7109.	OK CHARGE	7109.	OK CHARGE
114.	27112.	3602.	3602.	OK CHARGE	3602.	OK CHARGE
114.	27128.	2743.	2743.	OK CHARGE	2743.	OK CHARGE
114.	27144.	2743.	2743.	OK CHARGE	2743.	OK CHARGE
114.	27160.	5417.	5417.	OK CHARGE	5417.	OK CHARGE
114.	27176.	5417.	5417.	OK CHARGE	5417.	OK CHARGE
114.	27192.	5417.	5417.	OK CHARGE	5417.	OK CHARGE
114.	27208.	5417.	5417.	OK CHARGE	6206.	OK CHARGE
114.	27224.	5417.	5417.	OK CHARGE	5417.	OK CHARGE
114.	27240.	7109.	6206.	OK CHARGE	9326.	OK CHARGE
114.	27256.	2743.	2743.	OK CHARGE	3602.	OK CHARGE
114.	27272.	4127.	3143.	OK CHARGE	0.	--MISS CHG
114.	27288.	2743.	2743.	OK CHARGE	2743.	OK CHARGE
114.	27304.	6206.	5417.	OK CHARGE	6206.	OK CHARGE
114.	27320.	6206.	6206.	OK CHARGE	6206.	OK CHARGE
114.	27336.	6206.	6206.	OK CHARGE	6206.	OK CHARGE
114.	27352.	6206.	6206.	OK CHARGE	6206.	OK CHARGE
114.	27368.	6206.	6206.	OK CHARGE	7109.	OK CHARGE
114.	27384.	7109.	7109.	OK CHARGE	7109.	OK CHARGE
114.	27400.	0.	0.	OK NO CHG	0.	OK NO CHG
114.	27416.	2743.	2743.	OK CHARGE	2743.	OK CHARGE
114.	27432.	3143.	3143.	OK CHARGE	3143.	OK CHARGE
114.	27448.	3602.	3143.	OK CHARGE	9326.	OK CHARGE
114.	27464.	7109.	7109.	OK CHARGE	7109.	OK CHARGE
114.	27480.	7109.	7109.	OK CHARGE	7109.	OK CHARGE
114.	27496.	6206.	6206.	OK CHARGE	6206.	OK CHARGE
114.	27512.	1050.	915.	OK CHARGE	1050.	OK CHARGE
114.	27528.	1383.	1383.	OK CHARGE	1383.	OK CHARGE
114.	27544.	1820.	1587.	OK CHARGE	1820.	OK CHARGE
114.	27560.	1820.	1820.	OK CHARGE	1820.	OK CHARGE
114.	27576.	1820.	1820.	OK CHARGE	1820.	OK CHARGE
114.	27592.	3602.	3602.	OK CHARGE	3602.	OK CHARGE
114.	27608.	3143.	3143.	OK CHARGE	3143.	OK CHARGE
114.	27624.	3602.	3602.	OK CHARGE	3602.	OK CHARGE
114.	27640.	3143.	3143.	OK CHARGE	3602.	OK CHARGE
114.	27656.	3602.	3602.	OK CHARGE	3602.	OK CHARGE

Table 7a. (cont)

DAY	TIME	V EST	V CT	PROD RI	V COUNT	DROP
114.	27672.	2087.	2087.	OK CHARGE	2087.	OK CHARGE
114.	27688.	2087.	2087.	OK CHARGE	2087.	OK CHARGE
114.	27704.	2087.	2087.	OK CHARGE	2087.	OK CHARGE
114.	27720.	2087.	2087.	OK CHARGE	2087.	OK CHARGE
114.	27736.	2087.	2087.	OK CHARGE	2087.	OK CHARGE
114.	27752.	2087.	2087.	OK CHARGE	2087.	OK CHARGE
114.	27768.	2087.	2087.	OK CHARGE	2393.	OK CHARGE
114.	27784.	2087.	2087.	OK CHARGE	2087.	OK CHARGE
114.	27800.	2087.	1820.	OK CHARGE	2087.	OK CHARGE
114.	27816.	3143.	3143.	OK CHARGE	3143.	OK CHARGE
114.	27832.	2743.	2743.	OK CHARGE	2743.	OK CHARGE
114.	27848.	2743.	2743.	OK CHARGE	2743.	OK CHARGE
114.	27864.	2393.	2393.	OK CHARGE	2393.	OK CHARGE
114.	27880.	4127.	4127.	OK CHARGE	4127.	OK CHARGE
114.	27896.	4127.	4127.	OK CHARGE	4127.	OK CHARGE
114.	27912.	4127.	4127.	OK CHARGE	4127.	OK CHARGE
114.	27928.	3602.	3602.	OK CHARGE	4127.	OK CHARGE
114.	27944.	3602.	3602.	OK CHARGE	3602.	OK CHARGE
114.	27960.	3602.	3602.	OK CHARGE	3602.	OK CHARGE
114.	27976.	3143.	3143.	OK CHARGE	3143.	OK CHARGE
114.	27992.	3143.	3143.	OK CHARGE	3602.	OK CHARGE
114.	28008.	2743.	2393.	OK CHARGE	2743.	OK CHARGE
114.	28024.	2393.	2393.	OK CHARGE	2743.	OK CHARGE
114.	28040.	2393.	2393.	OK CHARGE	2393.	OK CHARGE
114.	28056.	2393.	2393.	OK CHARGE	2393.	OK CHARGE
114.	28072.	2393.	2393.	OK CHARGE	3602.	OK CHARGE
114.	28088.	2393.	2393.	OK CHARGE	2393.	OK CHARGE
114.	28104.	2743.	2743.	OK CHARGE	3143.	OK CHARGE
114.	28120.	2393.	2393.	OK CHARGE	2743.	OK CHARGE
114.	28136.	2393.	2393.	OK CHARGE	2743.	OK CHARGE
114.	28152.	796.	163.	--MISS CHG	1205.	OK CHARGE
114.	28168.	256.	221.	OK NO CHG	454.	OK NO CHG
114.	28184.	102.	102.	OK NO CHG	221.	OK NO CHG
114.	28200.	190.	190.	OK NO CHG	190.	OK NO CHG
114.	28216.	256.	42.	OK NO CHG	523.	--FALSE CH
114.	28232.	342.	61.	OK NO CHG	523.	--FALSE CH
114.	28248.	2087.	2087.	OK CHARGE	2087.	OK CHARGE
114.	28264.	2087.	2087.	OK CHARGE	2393.	OK CHARGE
114.	28280.	2743.	2393.	OK CHARGE	2743.	OK CHARGE
114.	28296.	2743.	2743.	OK CHARGE	2743.	OK CHARGE
114.	28312.	3143.	3143.	OK CHARGE	3143.	OK CHARGE
114.	28328.	2743.	2743.	OK CHARGE	3143.	OK CHARGE
114.	28344.	2743.	2743.	OK CHARGE	2743.	OK CHARGE
114.	28360.	2393.	2393.	OK CHARGE	2393.	OK CHARGE
114.	28376.	2087.	2087.	OK CHARGE	2393.	OK CHARGE
114.	28392.	0.	0.	OK NO CHG	0.	OK NO CHG
114.	28408.	0.	0.	OK NO CHG	0.	OK NO CHG
114.	28424.	0.	0.	OK NO CHG	0.	OK NO CHG
114.	28440.	0.	0.	OK NO CHG	0.	OK NO CHG
114.	28456.	0.	0.	OK NO CHG	0.	OK NO CHG
114.	28472.	0.	0.	OK NO CHG	0.	OK NO CHG
114.	28488.	0.	0.	OK NO CHG	0.	OK NO CHG
114.	28504.	0.	0.	OK NO CHG	0.	OK NO CHG
114.	28520.	0.	0.	OK NO CHG	0.	OK NO CHG
114.	28536.	0.	0.	OK NO CHG	0.	OK NO CHG
114.	28552.	0.	0.	OK NO CHG	0.	OK NO CHG
114.	28568.	140.	0.	OK NO CHG	0.	OK NO CHG
114.	28584.	21.	21.	OK NO CHG	21.	OK NO CHG
114.	28600.	21.	21.	OK NO CHG	21.	OK NO CHG
114.	28616.	15.	15.	OK NO CHG	27.	OK NO CHG

Table 7a. (cont.)

DAY	TIME	V EST	V CT PROD RI		V COUNT DROP	
114.	28632.	21.	0.	OK NO CHG	21.	OK NO CHG
114.	28648.	21.	0.	OK NO CHG	21.	OK NO CHG
114.	28664.	27.	27.	OK NO CHG	27.	OK NO CHG
114.	28680.	27.	27.	OK NO CHG	27.	OK NO CHG
114.	28696.	2393.	2393.	OK CHARGE	2393.	OK CHARGE
114.	28712.	2743.	2743.	OK CHARGE	2743.	OK CHARGE
114.	28728.	2743.	2743.	OK CHARGE	2743.	OK CHARGE
114.	28744.	0.	0.	OK NO CHG	0.	OK NO CHG
114.	28760.	27.	11.	OK NO CHG	34.	OK NO CHG
114.	28776.	27.	27.	OK NO CHG	7.	OK NO CHG

Table 7b. Results of the Distribution Function Rise and Drop Algorithms for individual spectra on Day 79114, for VCRIT=-500V.

DAY	TIME	V EST	V DISTR RISE		V DISTR DROP	
114.	21632.	0.	0.	OK NO CHG	0.	OK NO CHG
114.	21663.	0.	0.	OK NO CHG	0.	OK NO CHG
114.	21694.	0.	0.	OK NO CHG	0.	OK NO CHG
114.	21725.	0.	0.	OK NO CHG	0.	OK NO CHG
114.	21756.	0.	0.	OK NO CHG	0.	OK NO CHG
114.	21787.	0.	0.	OK NO CHG	0.	OK NO CHG
114.	21818.	0.	0.	OK NO CHG	0.	OK NO CHG
114.	21849.	0.	0.	OK NO CHG	0.	OK NO CHG
114.	21880.	0.	0.	OK NO CHG	0.	OK NO CHG
114.	21911.	0.	0.	OK NO CHG	0.	OK NO CHG
114.	21942.	0.	0.	OK NO CHG	0.	OK NO CHG
114.	21973.	0.	0.	OK NO CHG	0.	OK NO CHG
114.	22004.	0.	0.	OK NO CHG	0.	OK NO CHG
114.	22035.	0.	0.	OK NO CHG	0.	OK NO CHG
114.	22066.	0.	0.	OK NO CHG	0.	OK NO CHG
114.	22097.	0.	0.	OK NO CHG	0.	OK NO CHG
114.	22128.	0.	0.	OK NO CHG	0.	OK NO CHG
114.	22159.	0.	0.	OK NO CHG	0.	OK NO CHG
114.	22190.	0.	0.	OK NO CHG	0.	OK NO CHG
114.	22221.	0.	0.	OK NO CHG	0.	OK NO CHG
114.	22252.	0.	0.	OK NO CHG	0.	OK NO CHG
114.	22283.	0.	0.	OK NO CHG	0.	OK NO CHG
114.	22314.	0.	0.	OK NO CHG	0.	OK NO CHG
114.	22345.	0.	0.	OK NO CHG	0.	OK NO CHG
114.	22407.	0.	0.	OK NO CHG	0.	OK NO CHG
114.	22438.	0.	0.	OK NO CHG	0.	OK NO CHG
114.	22469.	0.	0.	OK NO CHG	0.	OK NO CHG
114.	22500.	0.	0.	OK NO CHG	0.	OK NO CHG
114.	22531.	0.	0.	OK NO CHG	0.	OK NO CHG
114.	22562.	0.	0.	OK NO CHG	0.	OK NO CHG
114.	22593.	0.	0.	OK NO CHG	0.	OK NO CHG
114.	22624.	0.	0.	OK NO CHG	0.	OK NO CHG
114.	22655.	0.	0.	OK NO CHG	0.	OK NO CHG
114.	22686.	0.	0.	OK NO CHG	0.	OK NO CHG
114.	22717.	0.	0.	OK NO CHG	0.	OK NO CHG

(continued)

Table 7b. (cont.)

DAY	TIME	V EST	V DISTR RISE		V DISTR DROP	
114.	22748.	0.	0.	OK NO CHG	0.	OK NO CHG
114.	22779.	0.	0.	OK NO CHG	0.	OK NO CHG
114.	22810.	0.	0.	OK NO CHG	4729.	--FALSE CH
114.	22841.	0.	0.	OK NO CHG	0.	OK NO CHG
114.	22872.	0.	0.	OK NO CHG	0.	OK NO CHG
114.	22903.	0.	0.	OK NO CHG	0.	OK NO CHG
114.	22934.	0.	0.	OK NO CHG	0.	OK NO CHG
114.	22965.	0.	0.	OK NO CHG	0.	OK NO CHG
114.	22996.	0.	0.	OK NO CHG	0.	OK NO CHG
114.	23027.	0.	0.	OK NO CHG	0.	OK NO CHG
114.	23058.	0.	0.	OK NO CHG	0.	OK NO CHG
114.	23089.	0.	0.	OK NO CHG	0.	OK NO CHG
114.	23120.	0.	0.	OK NO CHG	0.	OK NO CHG
114.	23151.	0.	0.	OK NO CHG	0.	OK NO CHG
114.	23182.	0.	0.	OK NO CHG	7109.	--FALSE CH
114.	23213.	0.	0.	OK NO CHG	6206.	--FALSE CH
114.	23244.	0.	0.	OK NO CHG	7109.	--FALSE CH
114.	23275.	0.	0.	OK NO CHG	0.	OK NO CHG
114.	23306.	0.	0.	OK NO CHG	0.	OK NO CHG
114.	23337.	0.	0.	OK NO CHG	0.	OK NO CHG
114.	23368.	0.	0.	OK NO CHG	0.	OK NO CHG
114.	23399.	0.	0.	OK NO CHG	0.	OK NO CHG
114.	23430.	0.	0.	OK NO CHG	0.	OK NO CHG
114.	23461.	0.	0.	OK NO CHG	0.	OK NO CHG
114.	23492.	0.	0.	OK NO CHG	8143.	--FALSE CH
114.	23523.	0.	0.	OK NO CHG	0.	OK NO CHG
114.	23554.	0.	0.	OK NO CHG	0.	OK NO CHG
114.	23585.	0.	0.	OK NO CHG	0.	OK NO CHG
114.	23616.	0.	0.	OK NO CHG	0.	OK NO CHG
114.	23647.	0.	0.	OK NO CHG	0.	OK NO CHG
114.	23678.	0.	0.	OK NO CHG	0.	OK NO CHG
114.	23709.	0.	0.	OK NO CHG	0.	OK NO CHG
114.	23740.	0.	0.	OK NO CHG	0.	OK NO CHG
114.	23771.	0.	0.	OK NO CHG	0.	OK NO CHG
114.	23802.	0.	0.	OK NO CHG	0.	OK NO CHG
114.	23833.	0.	0.	OK NO CHG	0.	OK NO CHG
114.	23864.	0.	0.	OK NO CHG	0.	OK NO CHG
114.	23895.	0.	0.	OK NO CHG	0.	OK NO CHG
114.	23926.	0.	0.	OK NO CHG	0.	OK NO CHG
114.	23957.	0.	0.	OK NO CHG	0.	OK NO CHG
114.	23988.	0.	0.	OK NO CHG	0.	OK NO CHG
114.	24019.	0.	0.	OK NO CHG	0.	OK NO CHG
114.	24050.	0.	0.	OK NO CHG	0.	OK NO CHG
114.	24081.	0.	0.	OK NO CHG	0.	OK NO CHG
114.	24112.	0.	0.	OK NO CHG	0.	OK NO CHG
114.	24143.	0.	0.	OK NO CHG	0.	OK NO CHG
114.	24174.	0.	0.	OK NO CHG	0.	OK NO CHG
114.	24205.	0.	0.	OK NO CHG	0.	OK NO CHG
114.	24236.	34.	0.	OK NO CHG	0.	OK NO CHG
114.	24267.	42.	0.	OK NO CHG	0.	OK NO CHG
114.	24298.	61.	0.	OK NO CHG	61.	OK NO CHG
114.	24329.	51.	51.	OK NO CHG	0.	OK NO CHG
114.	24360.	102.	0.	OK NO CHG	0.	OK NO CHG
114.	24391.	73.	0.	OK NO CHG	0.	OK NO CHG
114.	24422.	102.	0.	OK NO CHG	0.	OK NO CHG
114.	24453.	140.	0.	OK NO CHG	0.	OK NO CHG
114.	24484.	120.	0.	OK NO CHG	0.	OK NO CHG
114.	24515.	73.	0.	OK NO CHG	0.	OK NO CHG
114.	24546.	140.	0.	OK NO CHG	140.	OK NO CHG
114.	24577.	140.	0.	OK NO CHG	0.	OK NO CHG

Table 7b. (cont.)

DAY	TIME	V EST	V DISTR RISE		V DISTR DROP	
114.	24639.	296.	0.	OK NO CHG	0.	OK NO CHG
114.	24670.	221.	0.	OK NO CHG	0.	OK NO CHG
114.	24701.	342.	0.	OK NO CHG	0.	OK NO CHG
114.	24732.	163.	163.	OK NO CHG	0.	OK NO CHG
114.	24763.	256.	0.	OK NO CHG	0.	OK NO CHG
114.	24794.	140.	0.	OK NO CHG	140.	OK NO CHG
114.	24825.	256.	221.	OK NO CHG	256.	OK NO CHG
114.	24856.	120.	0.	OK NO CHG	0.	OK NO CHG
114.	24887.	140.	0.	OK NO CHG	0.	OK NO CHG
114.	24918.	86.	86.	OK NO CHG	0.	OK NO CHG
114.	24949.	120.	0.	OK NO CHG	0.	OK NO CHG
114.	24980.	163.	0.	OK NO CHG	190.	OK NO CHG
114.	25011.	102.	0.	OK NO CHG	0.	OK NO CHG
114.	25042.	163.	0.	OK NO CHG	0.	OK NO CHG
114.	25073.	120.	0.	OK NO CHG	0.	OK NO CHG
114.	25104.	140.	0.	OK NO CHG	0.	OK NO CHG
114.	25135.	163.	0.	OK NO CHG	0.	OK NO CHG
114.	25160.	0.	0.	OK NO CHG	0.	OK NO CHG
114.	25176.	140.	0.	OK NO CHG	0.	OK NO CHG
114.	25192.	73.	0.	OK NO CHG	0.	OK NO CHG
114.	25208.	256.	0.	OK NO CHG	0.	OK NO CHG
114.	25224.	140.	0.	OK NO CHG	0.	OK NO CHG
114.	25240.	120.	0.	OK NO CHG	5417.	--FALSE CH
114.	25256.	102.	0.	OK NO CHG	0.	OK NO CHG
114.	25272.	190.	163.	OK NO CHG	190.	OK NO CHG
114.	25288.	120.	0.	OK NO CHG	0.	OK NO CHG
114.	25304.	140.	102.	OK NO CHG	0.	OK NO CHG
114.	25320.	120.	0.	OK NO CHG	0.	OK NO CHG
114.	25336.	190.	0.	OK NO CHG	0.	OK NO CHG
114.	25352.	190.	0.	OK NO CHG	0.	OK NO CHG
114.	25368.	102.	0.	OK NO CHG	0.	OK NO CHG
114.	25384.	190.	0.	OK NO CHG	0.	OK NO CHG
114.	25400.	190.	0.	OK NO CHG	0.	OK NO CHG
114.	25416.	140.	0.	OK NO CHG	163.	OK NO CHG
114.	25432.	120.	0.	OK NO CHG	0.	OK NO CHG
114.	25448.	0.	0.	OK NO CHG	0.	OK NO CHG
114.	25464.	190.	163.	OK NO CHG	0.	OK NO CHG
114.	25480.	120.	0.	OK NO CHG	0.	OK NO CHG
114.	25496.	256.	0.	OK NO CHG	256.	OK NO CHG
114.	25512.	163.	0.	OK NO CHG	0.	OK NO CHG
114.	25528.	140.	0.	OK NO CHG	0.	OK NO CHG
114.	25544.	102.	0.	OK NO CHG	102.	OK NO CHG
114.	25560.	221.	190.	OK NO CHG	0.	OK NO CHG
114.	25576.	140.	0.	OK NO CHG	0.	OK NO CHG
114.	25592.	102.	0.	OK NO CHG	0.	OK NO CHG
114.	25608.	102.	102.	OK NO CHG	102.	OK NO CHG
114.	25624.	140.	0.	OK NO CHG	140.	OK NO CHG
114.	25640.	0.	0.	OK NO CHG	0.	OK NO CHG
114.	25656.	86.	86.	OK NO CHG	0.	OK NO CHG
114.	25672.	163.	0.	OK NO CHG	0.	OK NO CHG
114.	25688.	120.	0.	OK NO CHG	0.	OK NO CHG
114.	25704.	102.	0.	OK NO CHG	0.	OK NO CHG
114.	25720.	0.	0.	OK NO CHG	0.	OK NO CHG
114.	25736.	0.	0.	OK NO CHG	0.	OK NO CHG
114.	25752.	0.	0.	OK NO CHG	0.	OK NO CHG
114.	25768.	51.	0.	OK NO CHG	0.	OK NO CHG
114.	25784.	0.	0.	OK NO CHG	0.	OK NO CHG
114.	25800.	0.	0.	OK NO CHG	0.	OK NO CHG
114.	25816.	0.	0.	OK NO CHG	0.	OK NO CHG
114.	25832.	0.	0.	OK NO CHG	0.	OK NO CHG

Table 7b. (cont.)

DAY	TIME	V EST	V DISTR	RISE	V DISTR	DROP
114.	25848.	0.	0.	OK NO CHG	0.	OK NO CHG
114.	25864.	0.	0.	OK NO CHG	0.	OK NO CHG
114.	25880.	342.	0.	OK NO CHG	0.	OK NO CHG
114.	25896.	394.	0.	OK NO CHG	0.	OK NO CHG
114.	25912.	454.	0.	OK NO CHG	0.	OK NO CHG
114.	25928.	523.	454.	--MISS CHG	602.	OK CHARGE
114.	25944.	0.	0.	OK NO CHG	0.	OK NO CHG
114.	25960.	2743.	2393.	OK CHARGE	2743.	OK CHARGE
114.	25976.	5417.	5417.	OK CHARGE	5417.	OK CHARGE
114.	25992.	7109.	5417.	OK CHARGE	7109.	OK CHARGE
114.	26008.	5417.	5417.	OK CHARGE	5417.	OK CHARGE
114.	26024.	5417.	5417.	OK CHARGE	5417.	OK CHARGE
114.	26040.	5417.	4729.	OK CHARGE	5417.	OK CHARGE
114.	26056.	5417.	4729.	OK CHARGE	5417.	OK CHARGE
114.	26072.	5417.	5417.	OK CHARGE	5417.	OK CHARGE
114.	26088.	4127.	4127.	OK CHARGE	4729.	OK CHARGE
114.	26104.	3602.	3602.	OK CHARGE	3602.	OK CHARGE
114.	26120.	4127.	4127.	OK CHARGE	4127.	OK CHARGE
114.	26136.	4729.	4729.	OK CHARGE	4729.	OK CHARGE
114.	26152.	4729.	4729.	OK CHARGE	4729.	OK CHARGE
114.	26168.	5417.	4729.	OK CHARGE	5417.	OK CHARGE
114.	26184.	5417.	4729.	OK CHARGE	5417.	OK CHARGE
114.	26200.	4729.	4729.	OK CHARGE	4729.	OK CHARGE
114.	26216.	5417.	4729.	OK CHARGE	5417.	OK CHARGE
114.	26232.	4729.	4729.	OK CHARGE	4729.	OK CHARGE
114.	26248.	4729.	4729.	OK CHARGE	4729.	OK CHARGE
114.	26264.	4729.	4729.	OK CHARGE	4729.	OK CHARGE
114.	26280.	5417.	5417.	OK CHARGE	5417.	OK CHARGE
114.	26296.	4729.	4729.	OK CHARGE	4729.	OK CHARGE
114.	26312.	4729.	4729.	OK CHARGE	4729.	OK CHARGE
114.	26328.	4729.	4729.	OK CHARGE	5417.	OK CHARGE
114.	26344.	4729.	4729.	OK CHARGE	4729.	OK CHARGE
114.	26360.	4729.	4729.	OK CHARGE	4729.	OK CHARGE
114.	26376.	4729.	4127.	OK CHARGE	4729.	OK CHARGE
114.	26392.	4729.	4127.	OK CHARGE	4729.	OK CHARGE
114.	26408.	4729.	4127.	OK CHARGE	4729.	OK CHARGE
114.	26424.	5417.	5417.	OK CHARGE	5417.	OK CHARGE
114.	26440.	7109.	6206.	OK CHARGE	7109.	OK CHARGE
114.	26456.	7109.	7109.	OK CHARGE	7109.	OK CHARGE
114.	26472.	7109.	7109.	OK CHARGE	7109.	OK CHARGE
114.	26488.	8143.	8143.	OK CHARGE	8143.	OK CHARGE
114.	26504.	7109.	7109.	OK CHARGE	7109.	OK CHARGE
114.	26520.	7109.	7109.	OK CHARGE	7109.	OK CHARGE
114.	26536.	7109.	7109.	OK CHARGE	7109.	OK CHARGE
114.	26552.	7109.	7109.	OK CHARGE	7109.	OK CHARGE
114.	26568.	7109.	6206.	OK CHARGE	7109.	OK CHARGE
114.	26584.	6206.	6206.	OK CHARGE	6206.	OK CHARGE
114.	26600.	6206.	6206.	OK CHARGE	6206.	OK CHARGE
114.	26616.	5417.	5417.	OK CHARGE	5417.	OK CHARGE
114.	26632.	5417.	5417.	OK CHARGE	5417.	OK CHARGE
114.	26648.	5417.	5417.	OK CHARGE	5417.	OK CHARGE
114.	26664.	5417.	5417.	OK CHARGE	5417.	OK CHARGE
114.	26680.	5417.	5417.	OK CHARGE	6206.	OK CHARGE
114.	26696.	6206.	6206.	OK CHARGE	6206.	OK CHARGE
114.	26712.	6206.	6206.	OK CHARGE	6206.	OK CHARGE
114.	26728.	7109.	7109.	OK CHARGE	7109.	OK CHARGE
114.	26744.	7109.	7109.	OK CHARGE	7109.	OK CHARGE
114.	26760.	9326.	7109.	OK CHARGE	0.	--MISS CHG
114.	26776.	7109.	7109.	OK CHARGE	7109.	OK CHARGE
114.	26792.	7109.	7109.	OK CHARGE	7109.	OK CHARGE

Table 7b. (cont.)

DAY	TIME	V EST	V DISTR RISE		V DISTR DROP	
114.	26808.	7109.	6206.	OK CHARGE	7109.	OK CHARGE
114.	26824.	7109.	5417.	OK CHARGE	5417.	OK CHARGE
114.	26840.	5417.	5417.	OK CHARGE	6206.	OK CHARGE
114.	26856.	5417.	5417.	OK CHARGE	5417.	OK CHARGE
114.	26872.	5417.	5417.	OK CHARGE	5417.	OK CHARGE
114.	26888.	5417.	5417.	OK CHARGE	5417.	OK CHARGE
114.	26904.	4729.	4729.	OK CHARGE	4729.	OK CHARGE
114.	26920.	4729.	4729.	OK CHARGE	4729.	OK CHARGE
114.	26936.	4729.	4127.	OK CHARGE	4729.	OK CHARGE
114.	26952.	4729.	4127.	OK CHARGE	4729.	OK CHARGE
114.	26968.	5417.	5417.	OK CHARGE	5417.	OK CHARGE
114.	26984.	6206.	5417.	OK CHARGE	6206.	OK CHARGE
114.	27000.	6206.	6206.	OK CHARGE	6206.	OK CHARGE
114.	27016.	6206.	6206.	OK CHARGE	6206.	OK CHARGE
114.	27032.	5417.	5417.	OK CHARGE	6206.	OK CHARGE
114.	27048.	8143.	6206.	OK CHARGE	7109.	OK CHARGE
114.	27064.	8143.	7109.	OK CHARGE	7109.	OK CHARGE
114.	27080.	8143.	7109.	OK CHARGE	8143.	OK CHARGE
114.	27096.	8143.	7109.	OK CHARGE	7109.	OK CHARGE
114.	27112.	3602.	3143.	OK CHARGE	3602.	OK CHARGE
114.	27128.	2743.	2743.	OK CHARGE	2743.	OK CHARGE
114.	27144.	2743.	2743.	OK CHARGE	2743.	OK CHARGE
114.	27160.	5417.	4729.	OK CHARGE	5417.	OK CHARGE
114.	27176.	5417.	5417.	OK CHARGE	5417.	OK CHARGE
114.	27192.	5417.	5417.	OK CHARGE	5417.	OK CHARGE
114.	27208.	5417.	5417.	OK CHARGE	6206.	OK CHARGE
114.	27224.	5417.	5417.	OK CHARGE	5417.	OK CHARGE
114.	27240.	7109.	5417.	OK CHARGE	0.	--MISS CHG
114.	27256.	2743.	2743.	OK CHARGE	3602.	OK CHARGE
114.	27272.	4127.	2743.	OK CHARGE	4729.	OK CHARGE
114.	27288.	2743.	2743.	OK CHARGE	2743.	OK CHARGE
114.	27304.	6206.	5417.	OK CHARGE	6206.	OK CHARGE
114.	27320.	6206.	6206.	OK CHARGE	6206.	OK CHARGE
114.	27336.	6206.	6206.	OK CHARGE	6206.	OK CHARGE
114.	27352.	6206.	6206.	OK CHARGE	6206.	OK CHARGE
114.	27368.	6206.	6206.	OK CHARGE	6206.	OK CHARGE
114.	27384.	7109.	7109.	OK CHARGE	7109.	OK CHARGE
114.	27400.	0.	0.	OK NO CHG	0.	OK NO CHG
114.	27416.	2743.	2393.	OK CHARGE	2743.	OK CHARGE
114.	27432.	3143.	2743.	OK CHARGE	3143.	OK CHARGE
114.	27448.	3602.	3143.	OK CHARGE	3602.	OK CHARGE
114.	27464.	7109.	7109.	OK CHARGE	7109.	OK CHARGE
114.	27480.	7109.	6206.	OK CHARGE	7109.	OK CHARGE
114.	27496.	6206.	6206.	OK CHARGE	6206.	OK CHARGE
114.	27512.	1050.	915.	OK CHARGE	1050.	OK CHARGE
114.	27528.	1383.	1383.	OK CHARGE	1383.	OK CHARGE
114.	27544.	1820.	1587.	OK CHARGE	1820.	OK CHARGE
114.	27560.	1820.	1820.	OK CHARGE	1820.	OK CHARGE
114.	27576.	1820.	1820.	OK CHARGE	1820.	OK CHARGE
114.	27592.	3602.	3143.	OK CHARGE	3602.	OK CHARGE
114.	27608.	3143.	3143.	OK CHARGE	3143.	OK CHARGE
114.	27624.	3602.	3143.	OK CHARGE	3602.	OK CHARGE
114.	27640.	3143.	3143.	OK CHARGE	3602.	OK CHARGE
114.	27656.	3602.	3602.	OK CHARGE	3602.	OK CHARGE
114.	27672.	2087.	2087.	OK CHARGE	2087.	OK CHARGE
114.	27688.	2087.	2087.	OK CHARGE	2087.	OK CHARGE
114.	27704.	2087.	2087.	OK CHARGE	2087.	OK CHARGE
114.	27720.	2087.	2087.	OK CHARGE	2087.	OK CHARGE
114.	27736.	2087.	2087.	OK CHARGE	2087.	OK CHARGE
114.	27752.	2087.	2087.	OK CHARGE	2087.	OK CHARGE

Table 7b. (cont.)

DAY	TIME	V EST	V DISTR RISE		V DISTR DROP	
114.	27768.	2087.	2087.	OK CHARGE	2087.	OK CHARGE
114.	27784.	2087.	2087.	OK CHARGE	2087.	OK CHARGE
114.	27800.	2087.	1820.	OK CHARGE	2087.	OK CHARGE
114.	27816.	3143.	3143.	OK CHARGE	3143.	OK CHARGE
114.	27832.	2743.	2743.	OK CHARGE	2743.	OK CHARGE
114.	27848.	2743.	2743.	OK CHARGE	2743.	OK CHARGE
114.	27864.	2393.	2393.	OK CHARGE	2393.	OK CHARGE
114.	27880.	4127.	4127.	OK CHARGE	4127.	OK CHARGE
114.	27896.	4127.	4127.	OK CHARGE	4127.	OK CHARGE
114.	27912.	4127.	4127.	OK CHARGE	4127.	OK CHARGE
114.	27928.	3602.	3602.	OK CHARGE	4127.	OK CHARGE
114.	27944.	3602.	3602.	OK CHARGE	3602.	OK CHARGE
114.	27960.	3602.	3602.	OK CHARGE	3602.	OK CHARGE
114.	27976.	3143.	3143.	OK CHARGE	3143.	OK CHARGE
114.	27992.	3143.	3143.	OK CHARGE	3602.	OK CHARGE
114.	28008.	2743.	2393.	OK CHARGE	2743.	OK CHARGE
114.	28024.	2393.	2393.	OK CHARGE	2393.	OK CHARGE
114.	28040.	2393.	2393.	OK CHARGE	2393.	OK CHARGE
114.	28056.	2393.	2393.	OK CHARGE	2393.	OK CHARGE
114.	28072.	2393.	2393.	OK CHARGE	2393.	OK CHARGE
114.	28088.	2393.	2393.	OK CHARGE	2393.	OK CHARGE
114.	28104.	2743.	2743.	OK CHARGE	3143.	OK CHARGE
114.	28120.	2393.	2393.	OK CHARGE	2393.	OK CHARGE
114.	28136.	2393.	2393.	OK CHARGE	2743.	OK CHARGE
114.	28152.	796.	163.	--MISS CHG	163.	--MISS CHG
114.	28168.	256.	190.	OK NO CHG	256.	OK NO CHG
114.	28184.	102.	102.	OK NO CHG	102.	OK NO CHG
114.	28200.	190.	190.	OK NO CHG	190.	OK NO CHG
114.	28216.	256.	42.	OK NO CHG	256.	OK NO CHG
114.	28232.	342.	61.	OK NO CHG	61.	OK NO CHG
114.	28248.	2087.	2087.	OK CHARGE	2087.	OK CHARGE
114.	28264.	2087.	2087.	OK CHARGE	2393.	OK CHARGE
114.	28280.	2743.	2393.	OK CHARGE	2743.	OK CHARGE
114.	28296.	2743.	2743.	OK CHARGE	2743.	OK CHARGE
114.	28312.	3143.	3143.	OK CHARGE	3143.	OK CHARGE
114.	28328.	2743.	2743.	OK CHARGE	3143.	OK CHARGE
114.	28344.	2743.	2743.	OK CHARGE	2743.	OK CHARGE
114.	28360.	2393.	2393.	OK CHARGE	2393.	OK CHARGE
114.	28376.	2087.	2087.	OK CHARGE	2393.	OK CHARGE
114.	28392.	0.	0.	OK NO CHG	0.	OK NO CHG
114.	28408.	0.	0.	OK NO CHG	0.	OK NO CHG
114.	28424.	0.	0.	OK NO CHG	0.	OK NO CHG
114.	28440.	0.	0.	OK NO CHG	0.	OK NO CHG
114.	28456.	0.	0.	OK NO CHG	0.	OK NO CHG
114.	28472.	0.	0.	OK NO CHG	0.	OK NO CHG
114.	28488.	0.	0.	OK NO CHG	0.	OK NO CHG
114.	28504.	0.	0.	OK NO CHG	0.	OK NO CHG
114.	28520.	0.	0.	OK NO CHG	0.	OK NO CHG
114.	28536.	0.	0.	OK NO CHG	0.	OK NO CHG
114.	28552.	0.	0.	OK NO CHG	0.	OK NO CHG
114.	28568.	140.	0.	OK NO CHG	0.	OK NO CHG
114.	28584.	21.	21.	OK NO CHG	3.	OK NO CHG
114.	28600.	21.	15.	OK NO CHG	3.	OK NO CHG
114.	28616.	15.	15.	OK NO CHG	3.	OK NO CHG
114.	28632.	21.	0.	OK NO CHG	3.	OK NO CHG
114.	28648.	21.	0.	OK NO CHG	21.	OK NO CHG
114.	28664.	27.	21.	OK NO CHG	27.	OK NO CHG
114.	28680.	27.	21.	OK NO CHG	3.	OK NO CHG
114.	28696.	2393.	2393.	OK CHARGE	2393.	OK CHARGE
114.	28712.	2743.	2743.	OK CHARGE	2743.	OK CHARGE

Table 7b. (cont.)

DAY	TIME	V EST	V DISTR RISE		V DISTR DROP	
114.	28728.	2743.	2743.	OK CHARGE	2743.	OK CHARGE
114.	28744.	0.	0.	OK NO CHG	0.	OK NO CHG
114.	28760.	27.	15.	OK NO CHG	27.	OK NO CHG
114.	28776.	27.	27.	OK NO CHG	7.	OK NO CHG

Table 8a. Test results of the Count Drop Algorithm, with DROPFAC=0.60 and ICMIN=90, for VCRIT=-500V, with an enlarged data base.

RESULTS FOR COUNT DROP ALGORITHM

DAY	NSPEC	CHARGED	UNCHRGD	MISS-CH	F-ALARM	CORRECT	WRONG
86	710	.001	.970	.024	.004	.972	.028
87	349	.172	.628	.143	.057	.799	.201
98	318	.582	.418	0.000	0.000	1.000	0.000
100	305	.134	.754	.046	.066	.889	.111
104	328	.610	.387	.003	0.000	.997	.003
105	310	.306	.677	.013	.003	.984	.016
106	337	.573	.421	.003	.003	.994	.006
108	332	.491	.425	.084	0.000	.916	.084
114	339	.431	.543	.012	.015	.973	.027
117	318	.013	.959	.009	.019	.972	.028
118	229	0.000	.996	0.000	.004	.996	.004
120	380	0.000	.979	.016	.005	.979	.021
172	517	0.000	.878	0.000	.122	.878	.122
241	305	.043	.875	.030	.052	.918	.082
267	400	.003	.885	0.000	.113	.888	.113
270	417	.412	.540	.002	.046	.952	.048
271	720	.192	.740	.026	.042	.932	.068
272	418	.333	.498	.010	.160	.830	.170
273	419	.167	.683	.110	.041	.850	.150
274	422	.166	.822	.002	.009	.988	.012
276	417	.276	.628	.002	.094	.904	.096
277	423	.258	.716	.007	.019	.974	.026
282	622	.368	.605	.010	.018	.973	.027
283	416	.154	.805	.041	0.000	.959	.041
285	622	.302	.677	.014	.006	.979	.021
286	419	0.000	.998	0.000	.002	.998	.002
294	720	0.000	.986	0.000	.014	.986	.014
302	412	.194	.796	.002	.007	.990	.010
305	420	.133	.826	.033	.007	.960	.040
164	221	0.000	1.000	0.000	0.000	1.000	0.000
TOTAL	12565	.202	.746	.021	.032	.948	.052

Table 8b. Test results of the Distribution-Function Drop Algorithm with GAMMADR=5.5, for VCRIT=-500V, with an enlarged data base.

RESULTS FOR DISTRIBUTION FUNCTION DROP ALGORITHM

DAY	NSPEC	CHARGED	UNCHRGD	MISS-CH	F-ALARM	CORRECT	WRONG
86	710	.001	.973	.024	.001	.975	.025
87	349	.135	.648	.181	.037	.782	.218
98	318	.569	.418	.013	0.000	.987	.013
100	305	.125	.793	.056	.026	.918	.082
104	328	.601	.387	.012	0.000	.988	.012
105	310	.306	.677	.013	.003	.984	.016
106	337	.573	.421	.003	.003	.994	.006
108	332	.473	.425	.102	0.000	.898	.102
114	339	.434	.540	.009	.018	.973	.027
117	318	.016	.972	.006	.006	.987	.013
118	229	0.000	1.000	0.000	0.000	1.000	0.000
120	380	0.000	.982	.016	.003	.982	.018
172	517	0.000	.890	0.000	.110	.890	.110
241	305	.036	.882	.036	.046	.918	.082
267	400	0.000	.953	.003	.045	.953	.048
270	417	.412	.552	.002	.034	.964	.036
271	720	.185	.756	.033	.026	.940	.060
272	418	.337	.536	.005	.122	.873	.127
273	419	.129	.699	.148	.024	.828	.172
274	422	.166	.827	.002	.005	.993	.007
276	417	.276	.659	.002	.062	.935	.065
277	423	.243	.728	.021	.007	.972	.028
282	622	.373	.621	.005	.002	.994	.006
283	416	.166	.805	.029	0.000	.971	.029
285	622	.299	.678	.018	.005	.977	.023
286	419	0.000	.998	0.000	.002	.998	.002
294	720	0.000	.988	0.000	.013	.988	.013
302	412	.194	.799	.002	.005	.993	.007
305	420	.131	.831	.036	.002	.962	.038
164	221	0.000	1.000	0.000	0.000	1.000	0.000
TOTAL	12565	.198	.757	.025	.021	.954	.046

Table 8c. Test results of the Distribution-Function Rise Algorithm with GAMMARI=4.5, for VCRIT=-500V, with an enlarged data base.

RESULTS FOR DISTRIBUTION FUNCTION RISE ALGORITHM

DAY	NSPEC	CHARGED	UNCHRGD	MISS-CH	F-ALARM	CORRECT	WRONG
86	710	.006	.975	.020	0.000	.980	.020
87	349	.258	.679	.057	.006	.937	.063
98	318	.569	.418	.013	0.000	.987	.013
100	305	.167	.813	.013	.007	.980	.020
104	328	.610	.387	.003	0.000	.997	.003
105	310	.316	.681	.003	0.000	.997	.003
106	337	.573	.421	.003	.003	.994	.006
108	332	.557	.425	.018	0.000	.982	.018
114	339	.437	.558	.006	0.000	.994	.006
117	318	.013	.978	.009	0.000	.991	.009
118	229	0.000	1.000	0.000	0.000	1.000	0.000
120	380	0.000	.982	.016	.003	.982	.018
172	517	0.000	.998	0.000	.002	.998	.002
241	305	.046	.892	.026	.036	.938	.062
267	400	0.000	.998	.003	0.000	.998	.003
270	417	.412	.566	.002	.019	.978	.022
271	720	.197	.764	.021	.018	.961	.039
272	418	.306	.624	.036	.033	.931	.069
273	419	.215	.711	.062	.012	.926	.074
274	422	.164	.832	.005	0.000	.995	.005
276	417	.276	.705	.002	.017	.981	.019
277	423	.258	.733	.007	.002	.991	.009
282	622	.378	.622	0.000	0.000	1.000	0.000
283	416	.178	.805	.017	0.000	.983	.017
285	622	.312	.683	.005	0.000	.995	.005
286	419	0.000	1.000	0.000	0.000	1.000	0.000
294	720	0.000	1.000	0.000	0.000	1.000	0.000
302	412	.192	.799	.005	.005	.990	.010
305	420	.167	.833	0.000	0.000	1.000	0.000
164	221	0.000	1.000	0.000	0.000	1.000	0.000
TOTAL	12565	.211	.772	.012	.005	.983	.017

Table 8d. Test results of the Count Rise Algorithm, with RISEFAC=3.0 and ICMIN=50 for VCRIT=-500V, with an enlarged data base.

RESULTS FOR COUNT RISE ALGORITHM

DAY	NSPEC	CHARGED	UNCHRGD	MISS-CH	F-ALARM	CORRECT	WRONG
86	710	.001	.973	.024	.001	.975	.025
87	349	.264	.673	.052	.011	.937	.063
98	318	.575	.418	.006	0.000	.994	.006
100	305	.167	.807	.013	.013	.974	.026
104	328	.610	.387	.003	0.000	.997	.003
105	310	.316	.681	.003	0.000	.997	.003
106	337	.573	.424	.003	0.000	.997	.003
108	332	.545	.422	.030	.003	.967	.033
114	339	.440	.558	.003	0.000	.997	.003
117	318	.016	.978	.006	0.000	.994	.006
118	229	0.000	.996	0.000	.004	.996	.004
120	380	0.000	.979	.016	.005	.979	.021
172	517	0.000	1.000	0.000	0.000	1.000	0.000
241	305	.036	.905	.036	.023	.941	.059
267	400	0.000	.990	.003	.008	.990	.010
270	417	.412	.566	.002	.019	.978	.022
271	720	.189	.775	.029	.007	.964	.036
272	418	.325	.632	.017	.026	.957	.043
273	419	.208	.709	.069	.014	.916	.084
274	422	.166	.832	.002	0.000	.998	.002
276	417	.278	.707	0.000	.014	.986	.014
277	423	.258	.730	.007	.005	.988	.012
282	622	.378	.622	0.000	0.000	1.000	0.000
283	416	.166	.805	.029	0.000	.971	.029
285	622	.315	.683	.002	0.000	.998	.002
286	419	0.000	1.000	0.000	0.000	1.000	0.000
294	720	0.000	1.000	0.000	0.000	1.000	0.000
302	412	.192	.799	.005	.005	.990	.010
305	420	.167	.833	0.000	0.000	1.000	0.000
164	221	0.000	1.000	0.000	0.000	1.000	0.000
TOTAL	12565	.210	.773	.012	.005	.983	.017

Table 8e. Test results of the Count-Rise Product Algorithm with RISEFAC=3 and ICMIN=90, for VCRIT=-500V, with an enlarged data base.

RESULTS FOR COUNT RISE PRODUCT ALGORITHM

DAY	NSPEC	CHARGED	UNCHRGD	MISS-CH	F-ALARM	CORRECT	WRONG
86	710	.007	.973	.018	.001	.980	.020
87	349	.261	.679	.054	.006	.940	.060
98	318	.575	.418	.006	0.000	.994	.006
100	305	.167	.813	.013	.007	.980	.020
104	328	.610	.387	.003	0.000	.997	.003
105	310	.316	.681	.003	0.000	.997	.003
106	337	.573	.421	.003	.003	.994	.006
108	332	.554	.425	.021	0.000	.979	.021
114	339	.440	.558	.003	0.000	.997	.003
117	318	.016	.978	.006	0.000	.994	.006
118	229	0.000	1.000	0.000	0.000	1.000	0.000
120	380	0.000	.982	.016	.003	.982	.018
172	517	0.000	.998	0.000	.002	.998	.002
241	305	.036	.905	.036	.023	.941	.059
267	400	0.000	.990	.003	.008	.990	.010
270	417	.412	.571	.002	.014	.983	.017
271	720	.193	.775	.025	.007	.968	.032
272	418	.325	.636	.017	.022	.962	.038
273	419	.229	.709	.048	.014	.938	.062
274	422	.166	.832	.002	0.000	.998	.002
276	417	.276	.710	.002	.012	.986	.014
277	423	.260	.733	.005	.002	.993	.007
282	622	.378	.622	0.000	0.000	1.000	0.000
283	416	.178	.805	.017	0.000	.983	.017
285	622	.315	.683	.002	0.000	.998	.002
286	419	0.000	1.000	0.000	0.000	1.000	0.000
294	720	0.000	1.000	0.000	0.000	1.000	0.000
302	412	.192	.799	.005	.005	.990	.010
305	420	.167	.833	0.000	0.000	1.000	0.000
164	221	0.000	1.000	0.000	0.000	1.000	0.000
TOTAL	12565	.212	.774	.010	.004	.986	.014